

**THE  
RAILWAY GAZETTE**

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INCORPORATING

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### DIESEL RAILWAY TRACTION

*A Supplement illustrating and describing developments  
in Diesel Railway Traction is presented with every copy  
of this week's issue*

### August Bank Holiday Traffic Arrangements

IN expectation of greatly increased traffics during this August Bank Holiday the British railways have drawn up special timetables and arranged augmented services. During the week-end from today (Friday) to Tuesday next the main-line railways will run more than 3,500 extra trains. On the Great Western Railway 28,000 passenger trains will be run, including 115 expresses from Paddington in the twenty-four hours between 6 p.m. today and 6 p.m. tomorrow. Forty expresses will run from Birmingham to West Coast resorts today and tomorrow. Tomorrow, 270 trains will be received at Cardiff and 300 at Bristol (Temple Meads), and 300 holiday trains will pass through Taunton. The London Midland & Scottish Railway will run 1,000 special trains, 33 of which will leave Euston and St. Pancras for the North today. At the busiest period between 3.45 p.m. and 6.15 p.m. an express train will leave Euston every eight minutes. At Blackpool during the week-end 660 trains will be handled. The L.N.E.R. is running 1,800 extra trains between August 4 and 8, and tonight twelve and tomorrow night seven special trains will leave Marylebone for Newcastle-upon-Tyne. On Bank Holiday Monday 780 additional trains will be run by the L.N.E.R. The Southern Railway arrangements cover the running of 250 extra trains

from London terminal stations, including 108 additional boat expresses today and tomorrow, 19 extra trains to Bournemouth and Weymouth, 13 extra trains to Devon and Cornwall, and 80 extra expresses to Kentish and South Coast resorts. As for traffic to the Continent, no fewer than 90 additional boat trains will be run in connection with the Southern Railway short sea routes. To cope with traffic to Belgium, the Southern Railway will run its 11.0 p.m. ex-Victoria boat express for the Dover and Ostend steamers in five parts tonight and in four parts tomorrow night.

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### Glyn, Mills & Company

Glyn, Mills & Company, whose capital is to be acquired by the Royal Bank of Scotland, has long been associated with the leading railway companies. Glyn, Mills & Company was the only remaining bank to have preserved its independence, and as such it occupied a unique position among the London clearing banks. In 1930 the Royal Bank acquired virtually the whole capital of Williams Deacon's Bank, and it now controls two banks that are members of the London Clearing House, although not a member itself. The business of Glyn, Mills & Company was registered in 1885, and the capital, of £1,060,000, is held by about 18 stockholders. The terms of the purchase have not been disclosed, but it is understood that a substantial amount of stock of the Royal Bank will be issued in part satisfaction of the purchase, and to this end proposals will be submitted to increase the capital from £3,780,192 to £4,250,000. An interchange of directors will be proposed, but it is understood that Glyn, Mills & Company, like Williams Deacon's, will continue to carry on business under the same name and management as at present, and will issue separate balance sheets.

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### The Week's Traffics

Lower passenger takings account for a drop last week of £497,000 in the receipts of the four main-line railways. Passenger business in the corresponding week of last year was, however, augmented by the pre-Bank Holiday traffic. Merchandise and coal figures show a continued increase. For the 30 weeks to date of the current year the aggregate receipts are up by £485,000.

	30th Week				Year to date	
	Pass.	&c. Goods	&c. Coal	Total	Inc. or Dec.	%
L.M.S.R.	350,000	101,000	31,000	218,000	80,000	+0.22
L.N.E.R.	127,000	60,000	25,000	42,000	164,000	+0.61
G.W.R.	169,000	50,000	13,000	106,000	313,000	+2.04
S.R.	140,000	8,000	1,000	131,000	72,000	-0.58

London Transport receipts for the week come to £580,300, an increase of £13,100 on the corresponding week last year. The aggregate for the four weeks to date amounts to £2,356,500, an increase of £85,200.

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### Leopoldina Railway Position

That the troubles with which the Leopoldina Railway Company had been faced for some years past have been due primarily to exchange difficulties was pointedly emphasised by Mr. C. H. Pearson, Chairman of the company, in his address to the stockholders at the recent annual meeting. In 1929 the company paid a 5 per cent. dividend on the ordinary stock whereas in 1938 it earned little more than 20 per cent of its prior charges, although the company was doing nearly 20 per cent. more work for the Brazilian public in 1938 than in 1929, as measured by the traffic ton-miles. For doing this work the company received in currency 1.03 per cent. less in 1938 than in 1929. In sterling the gross receipts of £2,480,551

in 1929 were reduced to £1,159,027 in 1938, a decrease of no less than 53.28 per cent. Currency expenses, notwithstanding the growth of labour costs, showed a partial offset in 1938 compared with 1937 when expressed in sterling, but the currency cost of imported materials was greatly increased by a fall in exchange which particularly inflated the coal bill. The company has now made arrangements for a continuous supply, at a materially lower price, of wood fuel from a large forest property in the State of Rio, which will minimise the counter-effect of deviation of wagons. From the sympathetic attitude of the Brazilian Government the Chairman is still hopeful of financial assistance.

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### Why Railway Investment has Ceased

That the private investor in the U.S.A. cannot be expected to put money into the railways, if the State is to continue financing rival forms of transport in the shape of new roads and waterways, is the theme which, under the heading "The Parade to Moscow," forms the subject of a recent leading article in our American contemporary, the *Railway Age*. As critics of the "New Deal" allege, recent developments are a trend towards state socialism, and, in their opinion, the ultimate result for private enterprise will be determined by whether or not that trend is reversed in the near future. If highways and waterways were made self-supporting, by levies upon their users, it would be relatively easy to calculate future railway earnings, and investment in railways would be revived. The criticisms voiced by our contemporary are no doubt well founded, but on this side of the Atlantic we have the same problem, independently of any "new deal," and it is hoped it will be at least partly solved by the granting of a "square deal" to the railway companies. Over here the origins of the transport problem are not all recent, and it may be that in America also some at least of the factors leading to the present conditions are to be sought at a period which may considerably antedate the "New Deal."

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### Estonia and Lithuania in Railway Dispute

A decision of some interest regarding the present rights, as between Estonia and Lithuania, of the "First Company of Secondary Railways in Russia" which was granted a concession in 1892 for certain railways in the old Russian Empire, has recently been given by the Permanent Court of International Justice at The Hague. Included in the concession were railways now in Estonia, and the Panevezys-Saldutiskis Railway now in Lithuania. In December, 1917, the Soviet Government confiscated by decree the company's undertaking among other private ventures, but after the recognition of the independence of Estonia it agreed in 1922 to transfer to Estonia properties situate entirely in Estonian territory. In August, 1923, the Estonian Government promulgated a law providing for its purchase of all the railways of the company in its territory, and in November of the same year, the company at a general meeting held in Tallinn revised the terms of its concession in accordance with Estonian law and made Tallinn its registered headquarters. According to the Estonian Government the company, which adopted an Estonian title, was thus transferred into an Estonian company. The Estonian Government supported claims later made by the company against the Lithuanian Government for the Panevezys-Saldutiskis Railway, on the ground that it was the property of a company now become Estonian. Lithuania objected that the original company had ceased to exist and had no rights in Lithuania. The Hague Court upheld the Lithuanian objection on a preliminary point.

### Cases Alter Circumstances

To search or not to search. That has undoubtedly been the question occupying the minds of railway officials, as a result of the various bomb outrages in station cloak-rooms which culminated in the serious incidents at King's Cross and Victoria last week. That there have obviously been gaps in the net may appear strange in view of the close liaison which, we understand, exists between Scotland Yard and the railway police authorities, although to take drastic action, such as compelling passengers to disclose the contents of every receptacle, would, apart from alienating public goodwill, have clearly given rise to untold delay, inconvenience and expense. With the exception of London Transport, which, with the relatively small amount of "left luggage" passing through its hands, has found it possible to take a stronger line, the railways have decided to leave the matter of "opening up" to the discretion of their cloak-room staffs, while prominently displayed notices warn travellers of what may be expected of them. It is to be hoped that such methods, reinforced by the recently introduced legislation empowering the police to detain and search suspects "on sight," will put an end to these regrettable cases and the repercussions therefrom.

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### An L.M.S.R. Scottish Centenary

The centenary occurs tomorrow (Saturday) of the public opening of the first section (Ayr to Irvine, 11 miles) of what is now the L.M.S.R. between Glasgow and the Ayrshire Coast. When the line was opened throughout a year later (August, 1840), the journey of 41½ miles took 1½ hours as compared with a fastest time today of 45 minutes; the original line, which was built by the Glasgow, Paisley, Kilmarnock & Ayr Railway, cost about £20,600 a mile to construct, and over half of it was laid on stone sleepers. The Glasgow, Paisley, Kilmarnock & Ayr Railway was also linked with the first railway in Scotland, which it absorbed in 1846. This was a tramway constructed by the Duke of Portland for the conveyance of coal from collieries in the Kilmarnock area to the port of Troon; it was opened in 1811 and at holiday times passengers were conveyed in horse-drawn trams. It was on this line that one of the earliest experiments was made in the use of locomotives in Scotland, but the engine provided by George Stephenson was too heavy for the flimsy track, and after repeated breakages of rails had to be withdrawn.

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### Simplifying Freight Classification in America

In the editorial columns of our June 30 issue we gave some points from a statement on the work of the Road and Rail Central Conference, made to the press by Messrs. Roger Sewill and A. E. Sewell, Joint Chairmen of the conference. We then reported that the conference hoped ultimately to be able to reduce railway freight rates classes to seven or eight. From the United States we learn that the Traffic Advisory Committee of the Association of American Railroads is now engaged in simplifying the classification of the ever-increasing number of articles carried by the American railways. There are in America no less than 15,000 different classes for goods, and a 500-page book is necessary to include them. Before 1882 all the individual systems had their own separate classifications, but between that year and 1889 these were combined into joint classifications for the Eastern, Western, and Southern territories. More progress was made in 1919 when all descriptions of goods in the three groups were made uniform. Since then, however, the development of new materials and products

—unknown only a few years ago—has made the transportation classifications so complex that a radical move such as the present one had, in the interests of traders and railwaymen alike, become more and more necessary.

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#### A Greek Railway Construction Contract

An agreement made in 1925 by the Greek Government with a Belgian company (Société Commerciale de Belgique) for the construction and equipment of certain railways in Greece led to proceedings before the Permanent Court of International Justice at The Hague, which has recently given its decision thereon. Financing of the works was to be covered by a loan by the company to the Greek Government, which was to issue bonds to the company, such bonds to form part of the external debt to the Greek State. Any disputes were to be referred to arbitration. On account of the general financial crisis, the Greek Government was compelled in 1932 to default in the service of its debt. The company could not continue to pay the sub-contractors and the work came to an end. As the result of arbitration proceedings the Greek Government's debt was fixed in 1936 at 6,771,868 gold dollars and this award was not disputed. After lengthy negotiations which had no result, the Belgian Government took the matter before the International Court. The Greek Government asked the Court to rule that, in view of its present inability to pay, it should be left to come to an arrangement with the company on a basis similar to that agreed with the bondholders of its external debt. Such a ruling the Court was unable to make, but a declaration put in by the Belgian Government enabled the Court to record that the parties agreed on the possibility of negotiations for a settlement in which regard would be had to the capacity of Greece to pay.

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#### Maximum Speed Limits

A paper was presented recently to the Maintenance of Way Club of Chicago by Mr. John A. Gillies, an officer of the Santa Fe Railroad, in which the speaker questioned the wisdom of incurring expenditure in increasing curve superelevation and moving out signals to give greater braking distance, in order to raise an overall speed limit of 90 m.p.h. to 100 m.p.h. According to his calculations, with a train of which the proportion of weight in lb. to horsepower is 400 to 1—such as his own company's diesel-driven Super-Chief between Chicago and Los Angeles—it takes a distance of  $32\frac{1}{2}$  miles on the level from a standing start in which to attain 97 m.p.h., and even down a 1 in 100 gradient, although 90 m.p.h. could be reached in 8 miles, it would take a further 12 miles to increase this velocity to 100 m.p.h. With due regard to service slacks for curves, junctions, &c., the time to be saved by increasing an overall restriction from 90 to 100 m.p.h. is, he contends, so negligibly small as not to justify the expenditure involved in making the higher limit possible. But these calculations assume a relation between motive power and train weight which is far from being of universal application. The German high speed diesel units can without difficulty attain a speed of 100 m.p.h. in 7 miles from a standing start, and where conditions permit—that is to say, where the necessary expenditure has been incurred safely to permit 100 m.p.h. speeds—travel for considerable distances at this velocity. If the limit in Germany were cut to 90 m.p.h., there would be an appreciable increase in the overall times of these trains. As was shown in the article in our June 9 issue on the steam-hauled Milwaukee Hiawatha express, also, speeds up to 100 m.p.h. are depended on

for timekeeping, and are attained by more rapid acceleration than that on which the calculations of Mr. Gillies were based.

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#### The Yellow Signal Light in India

An article in the *Bengal Nagpur Railway Magazine* reports that the revision of Chapters II and XI of the General Rules for Open Lines of Railway in British India has been under prolonged consideration, the subject of the correct use of the yellow signal light having, among other things, called for careful investigation. It is understood that the final draft rules have now been considered by the Indian Railway Conference Association at Delhi, but we are not acquainted with the result. The yellow signal light was first authorised for "warner" signals in India, under approved special instructions, in the issue of the General Rules of 1929, the preceding issue of 1906 having contained the previously agreed "warner convention," under which a single "warner" arm, used at Class "A" stations, had a fixed green light over it. The yellow arm and light was, we believe, adopted only to a limited extent in the ordinary lower quadrant signalling, and we note with interest that the East Indian Railway is said to be definitely opposed to it. The yellow light has, however, found a place in the 3-position upper quadrant signalling adopted by the Assam-Bengal line in recent years and peculiar to that railway, while in various colour-light signalling installations it has been used with satisfaction in India. We speak with some diffidence, since Indian conditions differ from those obtaining here in many respects, but we should think that the East Indian Railway was on fairly sure ground in thinking it wise not to alter the present 2-position signalling system and its lights, leaving the use of the yellow light to those installations which are based on different fundamental principles. Such a course is likely to make things simpler for the drivers, a point calling for special attention in this case.

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#### 'Varsity Notes and News

We read, with amazement, that the Oxford University Railway Club, amongst other excursions, used to dine on the Penzance—Aberdeen train from Oxford to Leicester and drink on the Aberdeen—Penzance train from Leicester to Oxford, reaching the *alma mater* just before midnight. To this provocative challenge from the Isis there may already have been a suitable response from the Cam, but if not we would suggest the following plan of action. Rising at 4 a.m., the merry-makers proceed to Cambridge shed, where they cook a frugal meal of boiled eggs in the firebox of a locomotive recently lighted up; thence by slow goods to Norwich, a prize going to the *alumnus* who succeeds in abstracting the guard's cold tea to wash down the eggs. Their journey by the East Anglian to town is rendered joyous by twopennyworth of plaice-and-chips and bottled milk consumed in the luncheon car, and after reaching Liverpool Street the party occupies the intervening period, before the first fitted freight leaves Bishopsgate, by making as many journeys as possible to Seven Sisters and back, staying its hunger at all the intermediate stations with automatic machine chocolate cream. This 24 hours of hectic jollity is rounded off with an alfresco meal of tinned fruit on one of the humps at Whitmoor, the tins to be opened with a coupling-stick or not at all. Return to colleges may be by any medium available, road transport excepted. It would then quite definitely be up to the "dark blues" to go one better, and provided they "pushed the train out" in really newsworthy style we could forgive them their manifold failures in pushing a boat towards Mortlake.



## Railway Wages

**I**MPORTANT developments have been taking place during the last few days in the matter of railway wages. As reported on page 185, on Friday last, July 28, the general managers of the four main-line railway companies met representatives of the three railway trade unions and gave the reply to the representations submitted by the unions at the joint meeting on June 30. The unions were informed the companies had decided to increase the minimum rate of pay for adult male conciliation staff to 45s. a week, with effect forthwith. This, it was explained, will raise the lowest current rate from 43s. to 45s. a week and the lowest base rate from 41s. to 45s. a week. In taking this course the general managers explained that the companies had been influenced by the opinions expressed by the Railway Staff National Tribunal in its Decision issued in February last. In that Decision the tribunal expressed regret that "a general improvement, involving necessarily a great extra annual cost, cannot be properly recommended at a time when traffic receipts and still more net earnings had fallen so greatly and when the movement is still downwards." The tribunal, however, went on to say that "a strong case had been presented for making an increase upon the lowest rates a first claim as soon as the financial position made any substantial concession possible."

The number of men who will benefit from this offer of the companies is stated to be over 15,000 immediately, and a much larger number, ultimately, if there is a fall in the cost of living. The trade union representatives were informed that the net revenues for the past half-year showed an increase of £1,896,000, and the trend of traffic receipts is now definitely upwards, but the general managers were at pains to demonstrate that during the first half of the year 1939 there was recorded a decrease of about £2½ millions in net revenue, compared with the corresponding period of the year 1937—the year in which it was decided to terminate percentage reductions, restore standard conditions and to grant certain improvements in rates of pay and conditions of service. The decision of the railway companies to concede a minimum rate of 45s. a week for men in conciliation grades was somewhat in the nature of a surprise, for although it had been known that at the joint meeting on June 30 the companies had promised to consider, with sympathy, the unions' representations, it had not been expected that, after the rather emphatic manner in which the tribunal had dealt with the unions' claims in February last, the companies would find it practicable to make any concession.

It must be remembered that the three trade unions were not unanimous in putting forward a claim for a minimum rate of 50s. a week for adult male conciliation staff, for whereas the Railway Clerks' Association had agreed to lend its full support to the claim of the National Union of Railwaymen, the Associated Society of Locomotive Engineers and Firemen had not found it possible to subordinate its own claims and had determined to continue to press them, despite the fact that by presenting a united front for the 50s. minimum claim, the chances of achieving that end would be largely increased. In their submissions to the Railway Staff National Tribunal in January last, the companies demonstrated that it was impracticable to pay a large number of men with differing degrees of responsibility the same rate of pay, and the raising of men in receipt of less than 50s. a week to that rate of pay would involve consequential increases to many other and higher paid grades, thereby increasing the extra annual cost. The fact that the companies have decided to raise the existing minima to 45s. a week indicates very clearly the desire

of the companies to alleviate the lot of the lowest grades of their employees.

When the tribunal met in January last the trend of railway receipts was downwards, prospects were gloomy, and very few people were prepared to prophesy an increase of nearly two million pounds in net revenue by the end of the first half year. Happily the decline in receipts was arrested and the companies began to climb, albeit slowly, towards some measure of prosperity, and it is pleasing to think that they are now prepared to share this passing prosperity with those whose low wages tend to make life less sweet than it is to their better-paid colleagues. Whether or not the National Union of Railwaymen will accept this partial meeting of its claim remains to be seen, for it is understood that a delegate conference of the Union has been called to meet in London on August 12. The N.U.R. has pressed the full claim with a single-mindedness and stubbornness worthy of a great cause, but the Associated Society of Locomotive Engineers and Firemen has already indicated its disapproval of the concession to the lower paid grades—despite the fact that a number of engine cleaners will benefit—and at a meeting last Saturday there was talk of pursuing "other methods," while on Tuesday it was stated that strike action may be taken. It is to be hoped for the good of the railway industry as a whole that these extreme methods will not be resorted to.

At the time of writing it is not known, too, whether those railway shopmen whose basic rates and war wage combined are at present less than 45s. a week will be raised to the new minimum of 45s. It is only a month ago that a complete negative was given by the Industrial Court to all the claims of the unions catering for railway shopmen, but a claim for a minimum of 50s. a week was foremost of those claims. The action of the companies in making their gesture to conciliation grades is praiseworthy and generous and it must encourage those who have worked to improve railway wages. For our part we feel that the N.U.R. delegates who meet on Friday next will be well advised to accept, unreservedly, the wages increase now conceded by the companies.

## Locomotive and Track in India

**T**O say that locomotive and track are two complementary parts of the same machine may appear almost platitudinous, but the very fact that it is so readily taken for granted may cause neglect of its increasing importance as speeds and weights develop. The Indian Pacific Locomotive Committee's report, summarised in our issue of July 7, repeats the axiom and shows that much of the trouble with the Pacific locomotives in India arose from dealing with the two complementary parts separately. Although this occurred on the Indian railways, they have not been alone in failing to realise the importance of the axiom, as is shown by the committee's reference to locomotive types in England which in the past have given trouble on track below the highest standard. This is not the least valuable lesson of the report, and is one which, it may be hoped, will never have to be given again. If a locomotive runs steadily on lines designed and maintained to the very highest standard, that is not to say it is necessarily well designed as a vehicle and equally suitable for track that may be faultlessly designed or below the highest standard of maintenance. Conversely, such a track is not to be adjudged as satisfactory merely if locomotives of exceptionally good design run fairly smoothly upon it. In India, as the report shows, the "X" class Pacifics gave little or no trouble on certain lines, and were unsteady on others. Clearly, then, neither engine nor track could be passed as satisfactory without



investigation, and the committee pays tribute to the researches of the Indian Railway Board. But it required the committee to point to the precise causes of the trouble and to indicate the correct—and comparatively simple—remedies necessary.

The importance of correct side control of the engine had not been thoroughly understood in India, for the damping of the tendency to hunt by the use of high frictional resistance on the bogie slides, resorted to as a cure, had the effect of preventing the engine from adjusting itself freely to curvature in the track. The locomotive modified in accordance with the committee's recommendations—with adequate side control springs—rode as steadily as that modified by the Railway Board with high frictional resistance on the bogie slides, but retaining the weak control springs; but, because the bogie slides were comparatively frictionless, the committee's engine was able to adjust itself to curves readily. The one, in curing the trouble, incurred a new danger; the other cured it without. In this connection the committee's references to the flange pressure researches undertaken in other countries deserve noting, for they have brought about important benefits to the railways concerned.

Such criticisms as are made by the committee in its report are made with constructive intent, and appropriate remedies are recommended, but not the least important recommendation is the need for continual research, not from the parochial outlook of this or that department, but from the point of view of the safety of the travelling public. To give a lead in this matter, a whole chapter of the report is devoted to investigation into the first principles of the disturbing forces of a locomotive upon the track. This investigation is carried out in great detail, involving highly technical reasoning, and anyone directly concerned with the subject could do worse than read the whole seventeen pages of this Chapter III. Having gone to considerable trouble in setting forth so fully the theory of the various disturbing forces and their correction, and indicated the modifications considered necessary in engine and track, the committee hands the matter over for thorough practical research, with cautionary instructions that even its own recommended modifications should not be standardised until proved by exhaustive test to be satisfactory under all conditions of operation.

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### 1,000-ton Trains at 100 m.p.h.

A COMMITTEE of the Association of American Railroads has recently conducted a series of tests to ascertain the drawbar horsepower required to haul a 1,000-ton train at a constant speed of 100 m.p.h. on straight level track, the report of which is summarised on p. 171. The report is a somewhat elaborate, document, but actually the tests made were of simple character, and the data obtained no more than is sufficient to confirm broadly the Davis formula for train resistance. This is not to say that the performances of the locomotives were not remarkable, though a speed of 100 m.p.h. was only once reached during the tests, when a Union Pacific 4-8-4 locomotive of Class "FEFI" slightly exceeded this speed on a descending grade of 1 in 770. This locomotive showed itself capable of developing 3,000 drawbar h.p. at 100 m.p.h., which must certainly rank as the peak of authenticated locomotive performance so far. It is also remarkable to see the 15-year old Pennsylvania "K4s" class figure in such a series of tests, and the fact that this engine could give 2,000 drawbar h.p. at 80 m.p.h. is an indication of what can be done by first-class design, especially of cylinders and valve gear.

For the purpose of compiling data representative of the

conditions set forth under the terms of reference of the committee, the latter had to have recourse to a hypothetical locomotive having a maximum drawbar-horsepower of 5,000. The horsepower-speed curve for this locomotive is drawn purely on the basis of the Cole speed factors for the reduction of mean effective pressure with increase of speed, and the question therefore arises as to whether the actual test results confirm the validity of the Cole factors in the region of speed contemplated by the committee to the extent, say, that they confirm the validity of the Davis formula for train resistance at very high speeds. The report itself surprisingly makes no direct mention of this, one of the two essential factors in the case. It includes, however, a series of interesting plottings, on a speed basis, of the maximum drawbar horsepower recorded for the various locomotives in the tests. All these curves show a sudden sharp drop at the high-speed end to which there is no correspondence in the Cole formula. It is possible that this drop can be accounted for by the absence of any test points at full power at the highest speeds, though this would seem unlikely, first because the highest speeds possible were the objective of the tests, and secondly because none of the locomotives showed any shortness of steam at any time.

It is noteworthy that this sharp drop in the power curve occurs at just over 90 m.p.h. for two of the locomotives and just over 100 m.p.h. for the Union Pacific 4-8-4 locomotive. The report goes on to show what sort of results could be achieved assuming a "moderate improvement" on the Cole performance curve at higher speeds by improved cylinder performance, and there seems no reason to doubt that such figures could in fact be obtained. But herein lies the crux of the whole matter, and it is therefore all the more surprising that no attempt is made in the report to elucidate the actual performance of the locomotives tested in relation to the hypothetical performance curve laid down. One further point deserving of comment is the remarkable difference between the train resistance curves on the Pennsylvania and the other two railways concerned. At 78 m.p.h. the resistance on the Pennsylvania was 8 lb. per ton, against 9.25 on the other lines. The report suggests that this may be due to differences in track structure. The Pennsylvania is laid with rails of 131 lb. per yd., and the other lines, in general, with rails of 100 lb. per yd. Here, surely, is a field for investigation. It has long been apparent that changes in track construction, quality of rails, &c., have contributed their share to modern high speeds, and the economic value of this in reduced resistance might well be no less important than the reduction of wear of the rails. In any case precise knowledge of these effects would seem to be very well worth acquiring by the newly constituted research departments of our great railways.

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### Interim Dividends

THE interim dividend declarations of the four main-line companies have confirmed the optimistic impressions based on recent traffic increases, especially as that unknown factor, the working expenses, has also proved to be more favourable than was expected. On the whole, all the four companies have done rather better. The L.M.S.R. is paying the full 2 per cent. on the first preference. This was already foreshadowed by the full payment on the 5 per cent. redeemable preference, which ranks *pari passu*. On the other hand, consideration of any payment on the 1923 preferred (on which nothing was paid in 1938) is being deferred until the year end. The Southern Railway is to pay an interim of 1 per cent. on the deferred ordinary stock, which is the same as last year, although a final payment was made last year to

make up the full five per cent. maximum dividend. The L.N.E.R. has declared interim dividends of 2 per cent. on the four per cent. guaranteed stock, and 2 per cent. on the four per cent. second guaranteed stock, which is the same as a year ago. In 1938, however, the payments involved a draft on the general reserve, whereas this year no mention is made of any appropriation from reserve. The Great Western Railway Company has again decided not to pay any interim dividend on its ordinary stock. Taken as a whole, the results of working of the four companies for the half year make a better showing than had been expected. The principal figures are tabulated as follows:—

	G.W.R.	L.M.S.R.	L.N.E.R.	Southern
Traffic receipts ..	+404,000	+110,000*	+7,000*	+92,000
Gross earnings ..	+456,000	+25,000	+125,000	†
Total expenditure	+60,000	-612,000	-734,000	†
	+383,000	+637,000	+859,000	+17,000

\* Weekly figures for 26 weeks.

† Traffic receipts + £92,000; net ancillary receipts + £62,000; expenditure, + £137,000.

A noticeable feature of these figures is the reduction in expenditure on the two "goods" lines. The L.M.S.R. totals show an economy of no less than £612,000 in working expenses on the half year, but the company's statement warns stockholders that a similar reduction is not to be expected in the second half of the year and this may imply that the reduction in expenditure proceeds from administrative economies effected in 1938. Lord Stamp expressed the view at the last general meeting that prices this year might be expected to be the same as in 1938, and this of course is one of the principal factors. It is too soon to make any forecast of total earnings for the year, but prospects for the L.M.S.R. stockholders are somewhat improved and this was reflected by a slight upward movement in 1923 preference stock. The L.N.E.R. reduction of £734,000 in working expenses is particularly satisfactory, seeing that the economy is accompanied by increased earnings. Passenger receipts were

less by 0.74 per cent. but merchandise and coal traffic receipts were 1.28 per cent. higher. While the total number of passengers was less by 2,447,000 or 2.8 per cent. compared with the same period of 1938, the total tonnage of goods and coal (originating on the company's system) increased by 428,900, or 0.8 per cent. In the case of the Great Western, it must be pointed out that an increase of £456,000 in gross receipts has been earned with only a relatively small increase in expenditure. Earnings in 1938 were sufficient to cover the preference dividends, so that the improvement of £383,000 in net revenue is rather more promising for the ordinary stock, 1 per cent. on which requires £430,000.

The figures for the Southern are rather disappointing, increase in net revenue being only £17,000. The increase of £137,000 in expenditure was due principally to higher prices. In the case of the Southern, of course, the latter half of the year includes the greater part of the holiday traffic. The rise in expenditure however is a factor of consideration, especially as this may be due to power-station coal. As to prospects for the four companies, there is every hope that the improvement in traffics will continue and it remains to be seen what proportion of the corresponding receipts will remain as net revenue. Over-shadowing the whole question is the latent demand for a minimum wage. The concession has already been made of a 45s. minimum for conciliation grades (the cost of this for the four companies is about £100,000) but the 50s. demand still hangs over the companies' heads. Then there is the unknown quantity of A.R.P. in its various forms. Government grants will cover part of the cost but some outlay by the companies will almost certainly be involved. Against this, ancillaries are doing well and may be expected to constitute an important contribution to the final result for the year. There is however little hope in this prospect for the ordinary shareholder, and so long as this remains the case the railway companies cannot be said to be in anything but a depressed condition and there will remain the urgent necessity for legislation based on the "square deal" report.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### Experience with a Holiday Season

Watford,

August 2

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Your able staff succeeds in giving regular readers such as myself the impression that the highest bliss for a member of the public is to travel in a railway train. I was thereby encouraged recently to buy a holiday season ticket for a week's travel in a part of the country which I need not specify. On my first journey with this ticket I had to make connection with a bus service, and chose my train to allow a 20-min. margin. Unfortunately my train was 30 min. late, and the bus being punctual in its departure, I was involved in a 6s. fare for a taxi.

I still had sufficient faith in railway service to make another journey on the next day. This time my itinerary led me to a branch line whereon in boyhood's hour I loved to stray. I should be straying there still were it not for a sequence of tardy trains. My branch line service—home-ward-bound—left its terminus about the time it was supposed to reach the junction with the main line. Anxiety for my connection—a missed train would mean a 90-min. wait—rather spoilt my trip, so it was in an agitated state that I accosted a porter at the junction and asked if the 5 o'clock down had gone. "We haven't zeed un yet zur," was his reply, delivered with an air of smiling reassurance. So this time I benefited from the lateness, although I could not help reminding myself that two wrongs do not make a

right. Also, at a later stage of the journey, I had only 10 min. to wait for another train instead of the 35 min. which I had intended to devote to the congenial process of self-refreshment.

Hope springs eternal in the human breast, and a day or two later I again entrained for a country excursion. The time for the departure of my branch line train approached, was upon us, and was past. We sat in silence, parked in a small bay platform remote from the busy life of the station. Nobody seemed surprised that we were still there, or even to notice us at all. At length our guard called across to a colleague to enquire if the "down stopper" was in yet. Apparently the "down stopper" had already come and gone, possibly unrecognised because it was punctual.

I must say in justice to the railway that these experiences were on branch line or stopping trains, the long-distance services by which I travelled being well up to time. Unfortunately such episodes do not seem to be exceptional, for a local resident to whom I mentioned the matter replied, "Our trains are always like that in summer." He, however, was philosophical about it, and was actually travelling by train at the time he made the remark. More serious reflections are started by the comment of a holidaymaker, namely, "Of course, I think it's better to go by bus."

The railways! With all their faults I love them still. But it does deter one from planning excursions with a holiday season when services are so uncertain.

Yours faithfully,

L. A. C.

## PUBLICATIONS RECEIVED

### Guide to Current Official Statistics of the United Kingdom : Vol. 17, 1938.

London : H.M. Stationery Office. 9½ in. × 6 in. 404 pp. Paper covers. Price 1s. net.—In the use of statistics the importance of reference to original sources of information needs no emphasis, and the authoritative statistical record of changing social and economic values compiled in the course of the manifold activities of State departments is of vital interest to students of national affairs. The diversity of subjects presented in official reports, returns, and special surveys is, however, so vast that without special assistance a reference to the whole of the information bearing on a particular subject would entail prolonged research among several hundred volumes. The "Guide to Current Official Statistics," a work produced under the auspices of a committee of official statisticians, includes in an alphabetical list every subject on which official statistics are available, and, by referring to the appropriate heading, the enquirer will find descriptions regarding the date, detail, and mode of analysis of all the statistics available and a note of the official publications in which they appear.

### Boiler Feed Water Treatment.

By F. J. Matthews. Second Edition. London : Hutchinson's Scientific & Technical Publications, Paternoster House, E.C.4. 8½ in. × 5½ in. × 1 in. 319 pp. Illustrated. Price 12s. 6d.—Although this work does not cover specifically locomotive boiler conditions, being identified mainly with boiler feed water factors used in connection with stationary plants, its contents, and the method of treatment adopted, cannot fail to be of interest and value to those primarily concerned with the design and maintenance of boilers for locomotives. Any work having as its subject matter water characteristics, including scale formation, corrosion, foaming, and priming, and the treatment of boiler feed water, must appeal to boiler users of all kinds, and the authoritative nature of this second edition, with its numerous and well executed illustrations, make it a work of value from the reference point of view, with perhaps a special appeal to the chemist whose work brings him into contact with boiler feed water treatment. The tables of chemical factors, hardness characteristics, summary of good water conditions, and conversion data included in the appendix provide in a concise and easily accessible manner the particulars readers require.

**De Toekomst der Nederlandsche Spoorwegen (The Future of the Netherlands Railways).** By Professor Dr. J. Goudriaan. Rotterdam : Nijgh and Van Ditmar N.V. 8½ in. × 6½ in. 32 pages, 6 diagrams, and 5 tables. Price 12 cents.—This is a reprint of a lecture setting forth in very clear language the difficulties met with in recent years by

the Netherlands Railways, and discussing the related questions of water and road competition—both, especially the former, playing an unusually large part in the matter in the Netherlands. Also dealt with are working costs, fares, special facilities to attract traffic, the introduction of higher speeds, greater comfort and regular timings, and other details. The absurdity of the idea of abolishing railways in general is dwelt upon, and the view advanced that the problem facing the Netherlands can be solved only by considering it from a national economic standpoint. The railways belong to the Netherlands people and are directed and worked by their fellow countrymen, like any other Dutch business. They exist to serve the country's interest and are in the forefront for safe travel and sound equipment among the railways of Europe.

### Second Progress Report of the Research Committee of the Institute of Welding, 1939.

London : The Institute of Welding, 104, Victoria Street, S.W.1.—This report gives particulars of the research carried out during the 2½ years in which the Institute of Welding organisation has been actively at work. While part of the investigations had to be of a preliminary character, a good deal of actual results has already been achieved and to some extent published, and the necessary references are included in the report. The number of sub-committees and panels and their subjects indicate the wide scope of the welding research. Some of these subjects are of particular interest to railway engineers ; for instance, the weldability of high-tensile structural steels, alloy steels, and cast iron.

Other Panels are working on the subjects of frame structures, plate girder bridges, structural details, and various aspects of resistance welding, which plays an ever-growing part in the construction of rolling stock.

It appears that already good results have been obtained by centralising the whole of welding research activities in this way, thus avoiding overlapping of work and thereby saving time and money.

It is of some interest that in 1938-39 the income of the Research Committee was about £6,800, and that the preliminary estimate for the coming year provides for expenses of £8,580. It should be noted, however, that these expenses cover only a small proportion of the work actually being done, as many other research organisations, industrial firms, and universities are contributing their part of the work without making a charge to the Research funds.

**World Power Conference.**—The annual report for 1938 has recently been issued by the central office of the conference, 36, Kingsway, London, W.C.2. A sectional meeting was held in Vienna between August 25 and

September 2, 1938, with an attendance of over 1,000 from 37 countries. The British Government was officially represented by Sir Harold Hartley and Mr. J. M. Kennedy, and the British delegation, numbering 93, was nearly double the size of any other visiting delegation. It is announced that the second Chemical Engineering Congress is to be held in Berlin in 1940.

**Réseau Nautique.**—This publication is a guide to the French inland waterways for the benefit of the canoe enthusiast and of other small craft users, published by the S.N.C.F. (French National Railways). France is divided up into eight areas, mainly the basins of the principal rivers, and each forms the subject of a section or chapter of the booklet. The growing popularity of canoeing in France has dictated the issue of this guide, which sets forth the advantages of this form of holiday and explains the local conditions, the attractions, and railway and other facilities area by area. Sailing also is encouraged and the work is attractively illustrated.

**Slings for Many Uses.**—A new publication from Herbert Morris Limited, of Loughborough, presents the advantages, where lifting has to be done, of the firm's slings—which may be used in combination with any lifting gear—over improvised rope or chain slings. Several types of slings are described and their prices given.

### Bracket, Table, and Ceiling Fans.

—The General Electric Co. Ltd. has sent us a copy of its folder V. 8785, on electric fans. The table and bracket varieties are especially suitable for the home where they keep the kitchen cool and the living room adequately ventilated. For a few pence they can be run continuously for several days. Where a stronger current of air is needed the ceiling fan will be found to meet requirements. Specifications and prices of all ranges listed are included in the catalogue.

**Galahad and Era Steels.**—A new pamphlet from Hadfields Limited, Sheffield, enumerates some advantages and applications of the Galahad series of stainless steels and stainless iron. They are a high chromium type resistant to relatively mild corrosive influences and are amenable to heat treatment in the same way as the usual carbon and alloy constructional steels. A special grade of somewhat higher resistance to corrosion—containing 18 per cent. Cr.—is made for work in marine conditions or where the steel has to be used in contact with bronze or brass. Aero-plane parts, turbine rotors, valve components, and domestic cutlery are among the objects in Galahad steel illustrated in the pamphlet. Another pamphlet contains a graph showing the mechanical and non-scaling properties of Era 1414 austenitic nickel-chromium-tungsten steel for valves working under onerous conditions in internal combustion engines.



## THE SCRAP HEAP

THEY CAN TAKE IT

Some 320,000 people attended two big meetings in Moscow on June 30 to celebrate Soviet Russia's "Railway Day." M. Kaganovitch, People's Commissary for Transport, addressed the crowds for two hours on the development of railways in the Soviet Union.

\* \* \*

"Mike and Ike in Blue Chips again with Oil along Line" ran a recent headline in the *Wall Street Journal*. Far from being a cryptic reference to the doings of a son of Erin and his Semitic friend, it means that oil discoveries in Illinois have brought a return of prosperity to the Missouri & Illinois Railroad, which runs through the state.

\* \* \*

"At the foot of the menu in use in the restaurant cars of our most up-to-date railway we read that: 'A supplementary portion of any dish will be served on request.' I suppose the first six words mean 'second helpings.' Why not say so?"—From a letter to *The Times*.

\* \* \*

Mr. W. Wildman retired on July 31 after 45 years' service with the L.M.S.R. and the former L.N.W.R. As a restaurant car attendant, Mr. Wildman can claim to have been "waiter on wheels" to three reigning sovereigns, and to nearly every former crowned head in Europe as well as to every Prime Minister from

Sir Campbell Bannerman to Mr. Neville Chamberlain. Latterly, Mr. Wildman has been an Inspector in the L.M.S.R. Dining Car Department. He travelled over 50,000 miles with King George V and Queen Mary in the course of their journeys on the royal train.

\* \* \*

"Coming back from forty-eight hours' leave, the train was one and a half hours late at Dingwall. I put my head out of the window and made some impatient remark to an ancient railway official. He looked at me more in sorrow than in anger, and delivered himself of the following *obiter dictum*: 'Young mon, dinna fash yerself, the Hielan' Railway was no' deesigned ta stand the strain o' a European waur!'"

"Ashore" (at Rosyth) "meant walks within a radius of three or four miles of the pier at Charlestown, or visits to Dunfermline by the Charlestown express. For the sum of 'saxpence,' at infrequent intervals, I used to drive the engine of the aforesaid express."—From *"A North Sea Diary, 1914-1918,"* by Commander Stephen King-Hall.

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### CONSTABULA-RAY DUTY

The idea of using a portable X-ray apparatus for checking the contents of luggage and preventing the repetition of bomb explosions in cloak-rooms has been submitted by a London radiologist to the police. It appears, however,



"Dinna waste a penny on the wee train. Angus, when there's wheels ye can see go round for nothin'"

that this brain-wave has spent its force on the rocks of bureaucratic disdain, from which one can only assume that some nasty-minded person has "seen through" the well-meaning inventor. Alternatively, the wish of the entire "force" to be spared "exposure" linked to ridicule, when the hard, round object wrapped suspiciously in crêpe-de-chine pyjamas or gents' shirtwear turns out to be a bowling "wood," a football, or a Dutch cheese, may account for this absence of enthusiasm.

## One Hundred Years Ago

Extracts from the August, 1839, issue of *"The Railway Magazine"* (afterwards *"Herapath's Railway Journal"*), the oldest constituent of THE RAILWAY GAZETTE

Messrs. Stark & Fulton have completed two locomotive engines, which are to be shipped for Troon this day. They are in every respect beautiful specimens of workmanship, and finished in the highest style; they have been named the *Mercury* and the *Mazeppa*.—*Glasgow Herald*, July 12.

*Passengers' Tickets*.—We have just seen a system of tickets, invented by the managing director, Richard Hall, Esq., of the Eastern Counties Railway, previous to the opening, June 18, in principle very much like those of Mr. Edmonson, of the Manchester and Leeds Railway. It is almost impossible frauds can happen by it.

*Eastern Counties Railway*.—We understand the dreadful state in which the ex-secretary left the accounts of this company will soon be reduced to more order. If so, and report be true, and the directors do their duty, a certain fellow may find that his career

of vindictiveness is near its end. It is expected that the line from Brentwood to Brick-lane, within 400 yards of Shoreditch terminus, that is 18 miles long, will be completed about October.

*German Railways*.—That part of the Taunus Railway which lies between Frankfort and Höchst was opened on July 7. On the same day the Emperor Ferdinand's railway from Vienna to Brunn, a distance of about 19 German (85 English) miles, was opened with great solemnity. The first train performed the distance in a little more than four hours.

*Railway System for Passengers' Tickets*.—A very ingenious system has been invented by Mr. Edmonson, chief clerk in the Manchester and Leeds Railway booking office, to prevent frauds on the part of passengers and company's servants, and to keep the accounts. By it 110 attempts at fraud were prevented in one day.

*Glasgow and Ayr Railway*.—It is expected that part of this line will be opened on August 1, extending from Ayr to Irvine, being a distance of 11 miles. The directors will give a public entertainment at Ayr in honour of the occasion.—*Kilmarnock Journal*.

*Birmingham and Derby Junction Railway*.—This line will be opened to the public on August 12. The works are in a forward state, and the junction with the London and Birmingham Railway, near the Hampton station, is nearly completed. A train of three beautiful locomotive engines and tenders, intended for this line, were brought by Mr. Grantham, of the respectable firm of Messrs. Mather, Dixon & Company, of Liverpool, to this town, on July 4. These engines are on six wheels, and are a fine specimen of the perfection to which the science of engineering is now carried. They are similar in appearance to the well-known engines, the *Hornet*, *Hawk*, and *Vulture* on the Grand Junction Railway, which were all made at the same extensive works.—*Birmingham Journal*, July 6.

## OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

### UNITED STATES

#### Railways Likely to Receive Scant Help from Legislation

The Upper House of the American Congress several weeks ago passed a Transport Bill which would grant to the railways some of the requests made by their managements and trades union leaders for ameliorating the serious railway crisis. The principal gains to the railways from this Bill would be the extension of regulation by the Interstate Commerce Commission to include water transport rates—as the railways and motor carriers are already regulated—and the appointment of what might be the American equivalent of a "Royal Commission" to investigate and report upon the relative economic importance of the several modes of transport and the extent to which, if any, they may be favoured by subsidies or otherwise, contrary to the public interest.

The railways are sufficiently convinced of the public injury which is being wrought by the governmental favours extended to their competitors to believe that, if the proposed "Royal Commission" is appointed, its report will give strong support to their pleas to be relieved from the handicaps from which they suffer at present. Actually, the provision for regulation of water transport in the Bill will not help the railways much, because most of the water carriers are firms hauling their own goods in their own vessels, and hence not subject to effective rate regulation.

But the Bill which has passed the Upper House is not yet a law. The Lower House has still to act, and the Bill it will pass will be totally different from the Upper House Bill, leaving the actual legislation to be worked out by a conference committee of the two houses. So the railways may not get even the modicum of relief contained in Upper House Bill.

#### Labour Leaders Angered at Criticism of their "Racket"

One of the conditions which has threatened the enactment of railway relief legislation has been the anger of some of the railway labour chieftains at recent publicity accorded to the so-called "Adjustment Board racket." The labour people have threatened to withdraw their support for relief legislation unless agitation against the "racket" ceases, and railway managers are understood to have acquiesced to this demand.

The Adjustment Board is a body with legal standing, composed of equal representation of managements and unions, and is charged with the settlement of disputes which arise regarding wage payments and working rules.

With equal representation from both parties on the board, it frequently is unable to reach a decision in a dispute, and, in such cases, an impartial referee is appointed by the Government Mediation Board. Perhaps it is only a coincidence, but most of these referees have belonged to the legal profession or academic circles, and most of them have been openly sympathetic with labour. The result has been decisions which have cost the railways hundreds of thousands of pounds.

Moreover, these referees have forced the railways to reinstate employees who have been discharged for drunkenness; they have forced the reinstatement of shunting crews at stations where shunting has been long abandoned, with payment of as much as two and three years' wages to indemnify them for the time of their unemployment; and, finally, the award of so much money for work not done has multiplied the number of claims made. The Adjustment Board, in short, instead of composing differences between employers and employees has multiplied them manifold.

But the railroads have agreed not to assist henceforth in giving adverse publicity in the press to these referees' findings, and, meantime, a joint committee has been appointed in the endeavour to compose the differences regarding this question.

#### New P.R.R. Stainless Steel Coaches

The Pennsylvania Railroad has recently taken delivery from the Budd Manufacturing Company of Philadelphia, of 12 85-ft. stainless steel passenger coaches in addition to two similar coaches delivered earlier in the year. These cars are to augment the blue-ribbon trains during the holiday season and the period of the World's Fairs at New York and San Francisco. They have three-position individual reclining seats, spacious women's lounges with completely-equipped boudoir tables, and racks for heavy and bulky luggage; each seats 66 passengers. Smooth running is assured by the latest type of bogie having roller bearing axleboxes and shock-absorbing devices.

### CANADA

#### New C.N.R. Rolling Stock

The Canadian Car & Foundry Company has begun to deliver to the National Railways 50 40-ton box baggage cars, 5 all-steel mail and express cars, and 10 all-steel baggage cars. The box baggage cars are for less-than-car-load consignments and will be run in both passenger and van goods trains; they are painted the C.N.R. standard coach green and have the usual type of box-car lettering.

The mail and express cars are 77 ft. 3 in. in length and, like the all-steel baggage cars, are mounted on six-wheel bogies. They have turtle-back roofs and are adequately insulated against extremes of temperature—also like the baggage cars—and the mail compartments have been built to the requirements of the railway mail service.

The all-steel baggage cars are for express passenger service, and the only windows they have are in the side doors, but they are well ventilated.

### ARGENTINA

#### Maize Harvest

The second official forecast of this year's maize harvest, issued by the Ministry of Agriculture, puts the production at 5,150,000 tons, or 250,000 tons lower than the first estimate issued in April last. Although this figure is 726,000 tons, or 16.4 per cent. higher than that of last year, it is over 3,000,000 tons below the average for the last five years.

#### Fruit Exports

Heavy fruit shipments continue to be an important feature of the Argentine export trade. According to statistics furnished by the Ministry of Agriculture, during the first five months of the present year the quantity of fruit exported amounted to 50,223,361 kg., as compared with 30,965,291 kg. during the corresponding period of 1938, an increase of 19,258,070 kg., or 62.19 per cent. The varieties which contributed principally to this increase were pears (total weight 27,659,722 kg.); apples (10,985,680 kg.), and grapes (9,082,958 kg.). As compared with the corresponding period of last year, pears showed an increase of 9,953,125 kg.; apples an increase of 7,332,420 kg., and grapes an increase of 1,043,062 kg.

#### Rice and Tobacco Production

The National Grain and Elevators Board is giving increasing attention to the development of the cultivation of rice, chiefly in the Provinces of Tucumán and Corrientes, where the soil and climatic conditions are suited to the growing of this cereal, and a systematic study is being made of local conditions with a view to ascertaining the regions which promise to give the best results in this direction. During the year 1937-38, according to the figures issued by the board, 12,585 hectares (31,462 acres) were under rice cultivation, of which 12,314 hectares (30,785 acres) yielded a total production of 40,818 tons.

Tobacco is another product the cultivation of which is rapidly attaining the proportions of a new national industry. An estimate of the 1938-39 tobacco crop, issued by the Ministry of Agriculture, puts the total production at 18,366,000 kg., as compared with 10,484,400 kg. in 1936-37, an increase

of 75.17 per cent., and 7,812,700 kg. in 1937-38, an increase of over 135 per cent.

## BRAZIL

### Cotton Estimates

The third estimate of the 1938-39 cotton crop in the northern zone is given at 141,100 tons made up as follows:—

State	Tons
Pará ... ..	2,000
Maranhão ... ..	9,000
Piauhv ... ..	3,000
Ceará ... ..	28,000
Rio Grande do Norte ... ..	22,000
Parahyba ... ..	35,000
Pernambuco ... ..	25,000
Alagoas ... ..	11,000
Sergipe ... ..	5,000
Bahia (north) ... ..	1,100
	141,100

The first estimate of the southern zone totals 265,850 tons, as follows:—

State	Tons
Bahia (South) ... ..	6,000
Rio ... ..	1,500
Minas Geraes ... ..	7,500
Goyaz ... ..	750
São Paulo ... ..	245,000
Paraná ... ..	4,600
Other States ... ..	500
	265,850

## SOUTH AFRICA

### Results of Working 1938-39

The final results of working the South African Railways and Harbours for the financial year ended March 31, 1939, show a net deficit of £1,117,897 after allowing for special appropriations of £1,000,000 to Betterment Fund; £487,000 to deficiency in Superannuation and Pension Funds; £1,000,000 to Rates Equalisation Fund (this item has since been reversed reducing the deficit to £117,897); £450,000 to reduction in branch-line capital; £1,000,000 special contribution to Renewals Fund; £750,000 to writing out of capital account discount and expenses on pre-Union capital; and £20,879 to writing dead assets out of capital account. Revenue from transportation services for the year totalled £32,600,141, a decrease of £788,632 on the previous year. Railway working expenditure increased from £23,218,919 to £24,336,685. The total revenue from all services was £38,533,092 as compared with £39,233,639 in 1937-38, and the expenditure £34,943,110 compared with £33,075,555.

## INDIA

### Building Broad-Gauge Locomotives in India a Step Nearer

At the forthcoming meeting in Bombay of the Standing Finance Committee for Railways, on July 17-18, Sir Guthrie Russel, Chief Commissioner of Railways, is expected to propound a scheme for the construction of broad-gauge locomotives in India. From this announcement it seems clear that the Railway Board is bowing to pressure exerted by the Legislative Assembly.

It is also likely that a technical railway officer and a representative of the Finance Department will be deputed to consider details of this scheme, such as what proportion of locomotive parts can be manufactured in India, which workshops are best suited for their manufacture, and what proportion must be imported from abroad. It is suggested that, in the first instance, the Jamalpur shops of the East Indian Railway may be selected for making parts and assembling these and others imported for the erection of broad-gauge engines for the State Railways generally.

## CHINA

### Hunan-Kwangsi-Indo-China Line

A further section of this railway to the south-west, from Kweilin (capital of Kwangsi) to Liuchow—about 100 miles in length—is expected to be completed by the end of this year. Beyond Liuchow the line is being constructed via Nanning, Lungchow, Chenankang, and Wenyuen, there to connect with the French Indo-China system. Earthwork has been completed as far as Nanning and platelaying is in hand, and it is probable that the whole line will be completed before long. It will be remembered that the section from Hengchow (Henyang) junction, on the Canton—Hankow line, to Kweilin was opened not long ago.

## SWITZERLAND

### Visit of British Railway Queen

Miss Ella Forrest, the British Railway Queen, recently visited Berne and Zurich in her official capacity, to convey greetings from the British railways and trades unions to their counterparts in Switzerland. She was received in Berne by M. Etter, Chief General Manager, and representatives of the employees of the Swiss Federal Railways. In Zurich she visited the National Exhibition and was received in the Railways Building by Dr. Cottier, General Manager of the 3rd Division S.F.R.; M. Armin Meili, General Manager of the exhibition; and a representative of the railway staff. Amid speeches of friendship and greetings by Miss Forrest and Dr. Cottier, she was presented with a link in her chain of office by the administration and staff organisations of the Federal Railways jointly, as a sign of their close collaboration and mutual understanding, especially developed of late.

### Doubling and Electrification

The new Bill providing for credits towards works to relieve unemployment and for national defence was accepted by the Swiss people on June 4 by a considerable majority, and on June 27 the Administrative Board of the Federal Railways authorised a credit of fr. 5,400,000 for doubling the Sisikon-Fluelen and Taverne-Lugano sections of the Gotthard route, and fr. 10,400,000

for the electrification of the metre-gauge Brünig line (Lucerne—Interlaken). A sum of fr. 4,900,000 was also authorised for the purchase of 400 open goods wagons.

## HOLLAND

### New Return Tickets

Since the introduction of return tickets, obtainable on Saturday and Sunday and available till Monday, and returns available for a maximum period of a month, obtainable from July 1 to September 5 this year, the Netherlands Railways have also issued party returns for parties of from 5 to 9 persons, giving a saving of 8 to 14 per cent.

## ROUMANIA

### Railways and Five-Year Plan

The Economic Supreme Council has drawn up a five-year plan to aid the economic recovery of the country with special reference to the improvement of communications. Scarcity of railway rolling stock and the general organisation of all forms of transport require urgent attention, and the plan provides for the reorganisation of the railway system and for effecting economies to secure funds for financing the construction of new lines and marshalling yards, doubling those connecting Bucharest with the frontier, and building new rolling stock, as well as highways. Other activities to be assisted by the plan are canal constructions, the development of ports, conservancy of rivers, grain storage, and the improvement of agriculture and industry.

## NEW ZEALAND

### 60 Years of Railway Development

The increased importance of the Government Railways in the development of this country was shown in some figures recently released by the Minister of Railways. They are interesting in view of New Zealand's Centennial Exhibition and celebrations beginning in November next.

Sixty years ago there were 1,145 miles of open line in New Zealand, 809 miles in the South Island and 336 miles in the North Island. The total mileage was little more than one-third of today's figure. The train mileage in 1879 was 2½ millions compared with 13 millions for 1938-39. Goods tonnage of all classes was then 1,154,274, compared with over 7,500,000 in 1938-39. The gross revenue in 1878-79 was £758,096, as against £9,345,387 in 1938-39. In the intervening period the population has quadrupled to reach its present figure of over 1,600,000. A striking illustration of the increasingly prominent part played by the railways is the fact that in the intervening 60 years the railway revenue has increased from £1 17s. 11d. to £5 16s. 10d. a head of the population.



## TRAIN RESISTANCES AT HIGH SPEEDS

*U.S.A. tests with a train of 1,000 tons at speeds up to 100 m.p.h.*

A REPORT has recently been issued by the Association of American Railroads of a remarkable series of tests in America with a 1,000-ton train load. Some comments on this report are printed in an editorial article on page 165. The following account gives a summary both of the body of the report itself and the appendix, which contains a description of the test methods.

The Committee on Further Development of the Reciprocating Steam Locomotive was authorised in June, 1938, to conduct a series of road tests to determine the drawbar horsepower required to haul a 1,000-ton train at a constant speed of 100 m.p.h. on straight level track. In October, 1938, a 16-car test train, including dynamometer car, was assembled, equipped throughout with four-wheel trucks and conventional friction bearings. The test comprised a trip from Fort Wayne, Indiana, to Grand Island, Nebraska, and back, and six locomotives in all were employed, of the following three types:—

	Pennsylvania. Class "K4s"	Chicago & North-Western. Class "E 4"	Union Pacific. Class "FEF1"
Builder ..	Pennsylvania R.R.	American Loco. Co.	American Loco. Co.
Wheel arrange- ment	4-6-2	4-6-4	4-8-4
Date built ..	1924	1938	1937
Boiler pressure, lb. per sq. in.	205	300	300
Cylinder dimen- sions	27 × 28	25 × 29	24½ × 32
Diam. of driving wheels, in.	80	84	77
Weight on driving wheels, lb.	209,300	216,000	270,000
Total wt. in work- ing order, lb.	320,000	412,000	465,000
Weight of tender loaded, lb.	221,500	360,000	352,200
Grate area, sq. ft.	70	91	100
Total heating sur- face, sq. ft.	4,984	5,863	6,070
Rated tractive force, lb.	44,460	55,000	63,500
Type of stoker ..	Standard* "HT"	Standard "BK"	Standard "BK"

\* The other Pennsylvania "K4s" class locomotive used was hand-fired, and consequently the weights differed slightly from those tabulated.

All the locomotives burned coal, the calorific value varying from 13,354 B.Th.U. per lb. on the Pennsylvania Railroad to 10,700 on the Chicago and North Western, and 11,910 on the Union Pacific.

Dynamometer car records of speed and drawbar pull were taken over the greater part of the distance travelled, but to obtain the information desired, sections of the record were selected where the profile showed a continuous or constant grade at least 6,300 ft. long. As the length of the test train was 1,300 ft., calculations could thus be made over a length of 5,000 ft. These stretches were, in general, on straight track. To obtain the train resistance, the measured drawbar pull was corrected for the effect of grade and of acceleration. As far as possible, test stretches were selected so that the change of level of the centre of gravity of the train was the same as that of the dynamometer car. In correcting for acceleration the mass of the train and locomotive was increased by 3.3 per cent. to allow for the energy of rotation of wheels and axles.

Figs. 1, 2, and 3 show the resistance in pounds per ton, over the test stretches for each railroad. The varying degrees of dispersion of the points plotted will be noted.

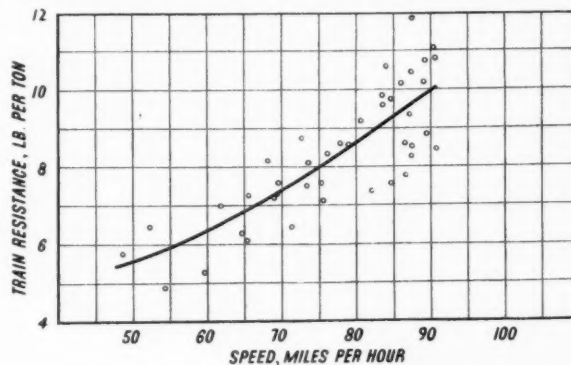


Fig. 1 Train resistance curve, Pennsylvania Railroad

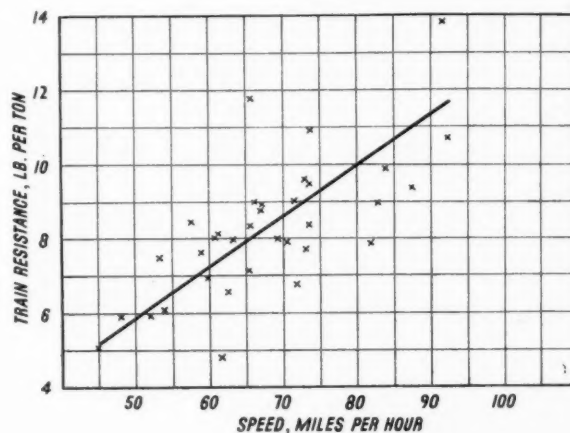


Fig. 2 Train resistance curve, Chicago & North-western Railway

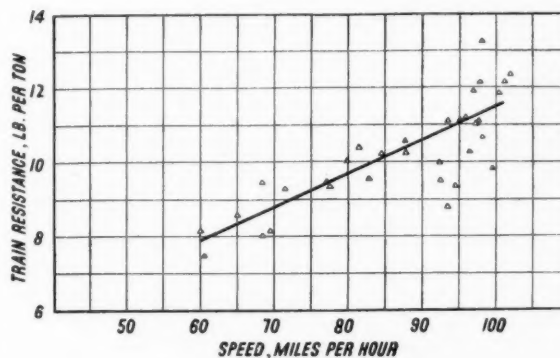


Fig. 3 Train resistance curve, Union Pacific Railroad

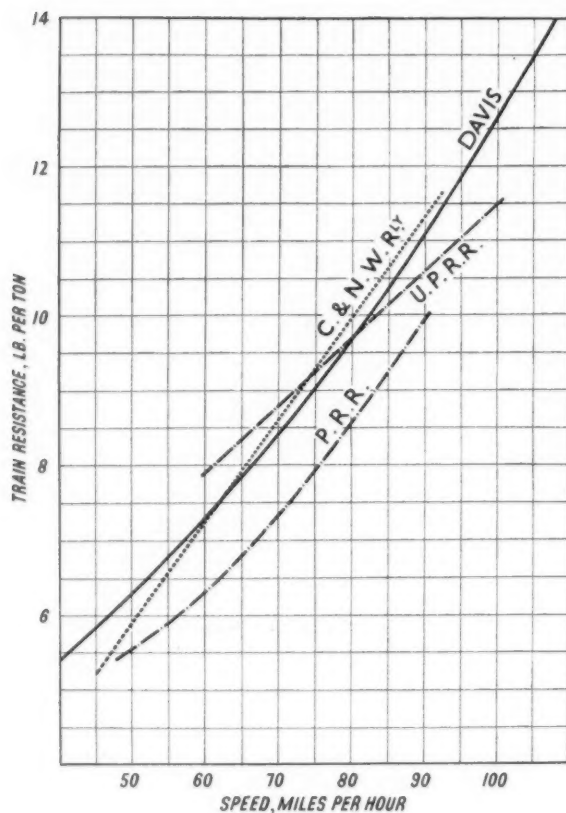


Fig. 4 Train resistance curves, compared with Davis Formula

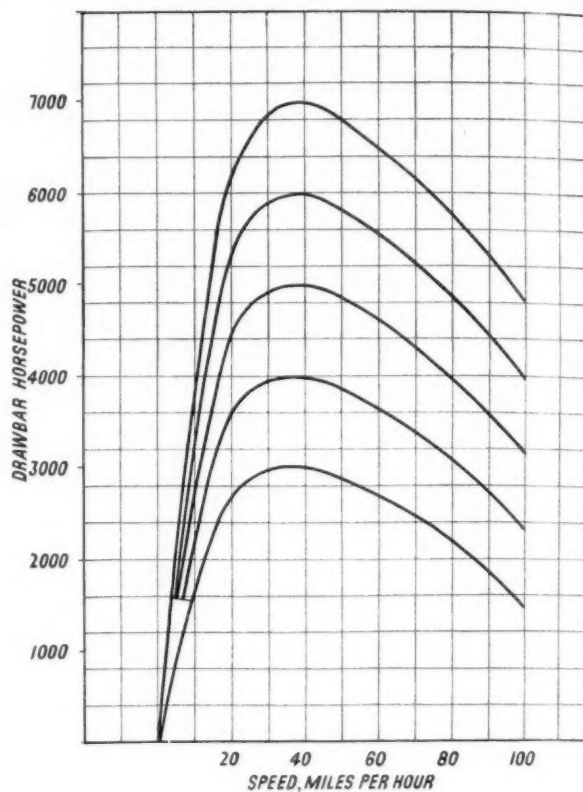


Fig. 6 Drawbar-horsepower speed curves

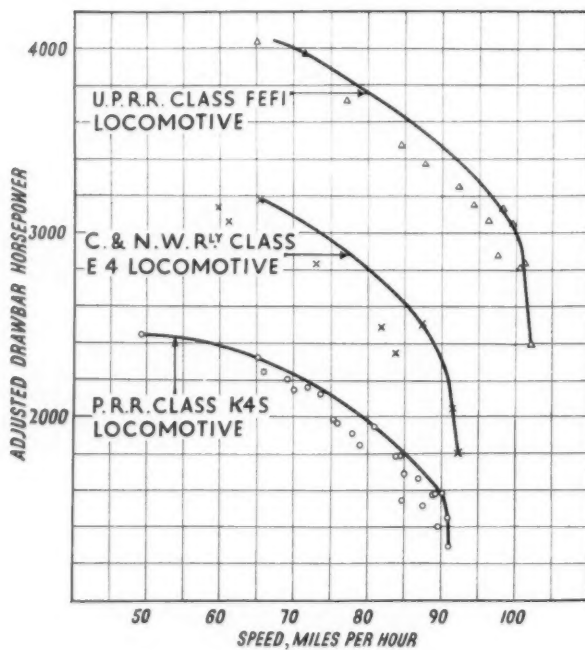


Fig. 5 Highest values of adjusted drawbar horsepower

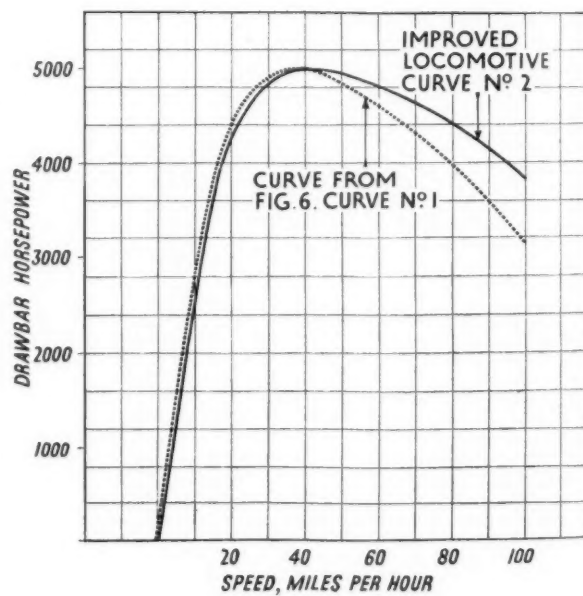


Fig. 10 Drawbar-horsepower speed curves for 5,000 maximum drawbar horsepower

#### TRAIN RESISTANCES AT HIGH SPEEDS

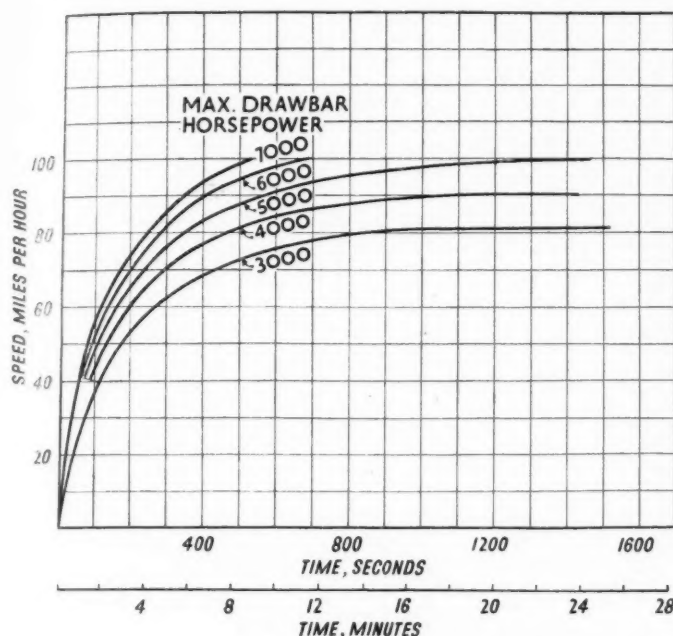


Fig. 7. Speed-time curves for 1,000-ton train on straight level track

Fig. 4 shows the average curves drawn through these plottings in comparison with a curve based on the formula of W. J. Davis, of the General Electric Company.\* Although the same train was used on all three railroads, the resistance varied considerably, and the only explanation may be difference in track structure. The tests were run in moderately warm weather, with low wind velocity. With this consideration in mind, the curve based on the Davis formula is as representative of the test data as any other. The formula is as follows:—

$$R = 1.3 + \frac{29}{w} + 0.03V + \frac{0.041V^2}{wn}$$

where  $R$  is the resistance in pounds per ton,  $n$  is the number of axles per car,  $w$  is the weight per axle in tons, and  $V$  is the speed in miles per hour (1 ton = 2,000 lb.).

While the tests were run primarily to determine the train resistance at high speeds, record was made of the maximum drawbar horsepower developed by each test locomotive. The figures are plotted in Fig. 5. They represent the adjusted horsepower that would have been delivered at the drawbar if the locomotive had been running at constant speed on straight level track.

For the purpose of plotting a series of acceleration curves approximating actual conditions with existing steam locomotives, a series of drawbar-horsepower speed curves was prepared (Fig. 6) for locomotives developing maximum drawbar horsepower of 3,000 to 7,000. These curves are not based on the results of these tests, but on the empirical Cole speed factors for the decrease of mean effective pressure with increasing speed.

\* General Electric Review, 1926, vol. 29, p. 685

25 lb. per ton of estimated weight on the drivers was deducted from the cylinder tractive effort, in accordance with American Locomotive Company practice, to get the horsepower developed at the rims of the driving wheels, after which the resistance of the engine, trailer, and tender trucks, and the head end air resistance, were calculated by the following Davis formula\* and deducted to determine the drawbar horsepower:—

$$\text{Running resistance} = 1.3 + \frac{29}{w} + 0.03V$$

where the resistance is in pounds per ton,  $w$  is the average weight per axle in tons and  $V$  is the speed in miles per hour.

$$\text{Locomotive head end air resistance} = 0.36V^2.$$

Acceleration curves, based on these calculated horsepower curves, are shown in Figs. 7 and 8. It must be noted that these curves are all for a 1,000-ton train. The effect of grades is such that on an ascending grade of 1 in 1,000 a 5,000-d.b.h.p. locomotive will not accelerate the 1,000-ton train beyond a speed of 92 m.p.h., while even on a descending grade of 1 in 330 it will require about 5.65 miles to accelerate the train from 80 to 100 m.p.h. Fig. 9 shows comparative acceleration curves for a 5,000-h.p. locomotive hauling a 1,000-ton and an 800-ton train, respectively. In order to find out how much additional power would be required to accelerate the 1,000-ton train at the same rate as the 800-ton train, a new drawbar-horsepower curve was assumed for a 5,000-d.b.h.p. locomotive. This curve is shown in Fig. 10 in comparison with the original curve based on the Cole factors, and the resultant acceleration curve is also plotted on Fig. 9. The modification represents a moderate improvement in the power developed at high speeds which it should be possible to secure.

Nothing developed in the tests to indicate that any of the locomotives had reached the limit of boiler capacity,

\* Loc. cit.

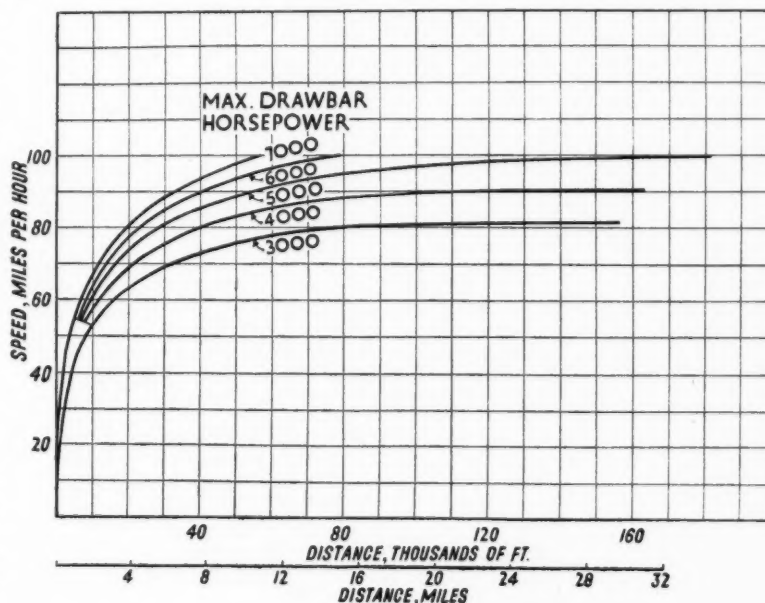


Fig. 8. Speed-distance curves for 1,000-ton train on straight level track



so that the question of sustained power at high speeds is one of mean effective pressure in the cylinders. It is evident that if the mean effective pressure remains constant as the speed increases, the power of the locomotives will increase with speed; but since the mean effective pressure or any cycle of valve events necessarily decreases with the speed, the ideal locomotive must have port openings so large and so accurately timed that this decrease will be kept as low as possible until the maximum speed has been reached. The factors of design which have a direct bearing on maximum mean effective pressure are as follow:—

1. High boiler pressure.
2. Minimum pressure drop from boiler to steam chest.
3. Large steam-chest volume.
4. Maximum valve port openings.
5. Minimum back pressure in exhaust passages.

Other factors that affect the power delivered to the drawbar are machinery friction, rolling resistance, and head end air resistance.

In conclusion, the following table shows the distance which would be required to accelerate the 1,000-ton test train at various speeds and horsepowers:—

Maximum drawbar horsepower	Distance, miles, to accelerate between speeds of		
	0-50 m.p.h.	50-80 m.p.h.	80-100 m.p.h.
3,000	1.51	13.98	—
4,000	1.13	6.36	—
5,000	0.93	4.41	29.00
6,000	0.80	3.48	10.74
7,000	0.71	2.92	7.13

### New Reichsbahn Law in Germany

THE German Government passed on July 4, 1939, a new Law known as the State Railway Law (*Reichsbahngesetz*) with the object of regularising the position created by the Chancellor's announcement of January 30, 1937, in the Reichstag and the Law passed in the next month, by which the railway system was declared to be once more under the jurisdiction of the State alone. The new Law declares the Reichsbahn to be exclusively the property of the German State, to be operated by it as a separate economic undertaking with its own accounts and balance sheet. All public and private rights and obligation previously recognised as attaching to the State Railway system are transferred to the present undertaking, which includes the former Austrian Federal and Sudetenland lines and the railways in the recently acquired Memel territory. The Minister of Transport is declared to be General Manager of the railways, assisted by a board of experts and charged with the duty of managing the property in the service of the German people and their economic life, with due regard to the requirements of national defence. There is a consultative committee of 14 members, experienced in economics or transport work, 12 nominated for 3 years each by the Government, 2 among them at the choice of the representative of the Chancellor. Two members act further as representatives of the holders of the bonds

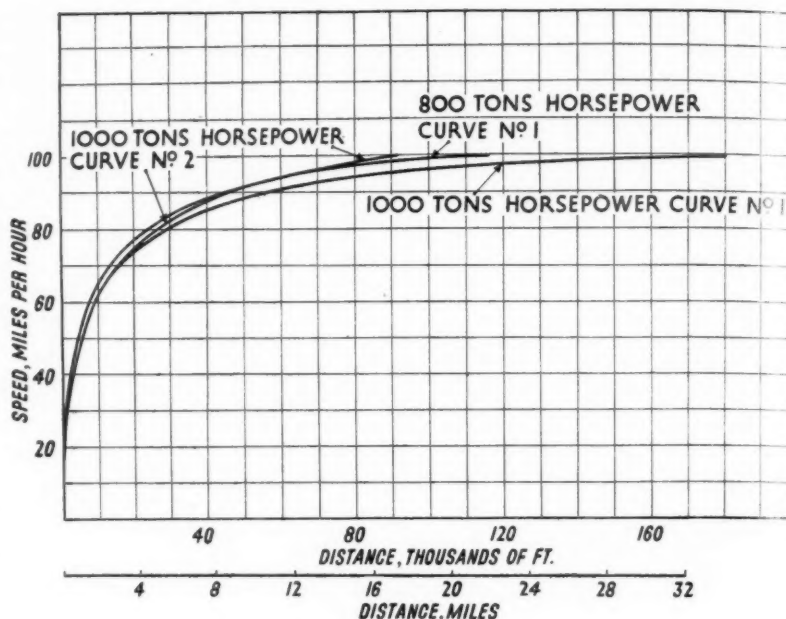


Fig. 9. Speed-distance curves for 5,000 maximum drawbar horsepower

BIGGER ENGINES FOR L.M.S.R. MANCHESTER—LONDON EXPRESSES.—The L.M.S.R. has transferred to its Longsight (Manchester) depot two locomotives of the "Princess Royal" (4-6-2) type, which will be used for working the Mancunian, Lancastrian, and Comet 3½-hour-services to and from London. These engines are able to haul 500 tons unaided, compared with 415 tons which is the maximum that the "Royal Scot" engines can take without assistance on the fastest Manchester—London passenger duties. One of the engines transferred to Longsight is the *Princess Elizabeth*, which made the Euston—Glasgow six-hour test runs in 1936.

issued by the former State Railway Company; as such bonds are redeemed and representation ceases to be necessary the Government can nominate persons in place of these members. Service on this committee is honorary.

The undertaking is under an obligation to pay to general State funds a sum varying with the receipts for the year. If these reach a figure of 4,600,000,000 RM., 3 per cent. of this is to be paid over. Should the receipts be more or less than this, then the amount to be paid is increased or reduced by 10 per cent. of the difference, with a minimum of 100,000,000 RM. Operating receipts are to be drawn up to 120,000,000 RM.; beyond this from sums remaining over after setting aside certain amounts to various prescribed sinking and other special funds. Two per cent. of the operating receipts are to go to a general reserve fund, until the figure reaches 600,000,000 RM.; 36,000,000 RM. are to be set aside yearly to pay off the bonds issued in the company days. The Reichsbahn is not an undertaking set up for making profit in the ordinary sense but is to be conducted on an economic basis. Its officers are public servants, under the Minister of Transport. Certain sections of the Law are retrospective to January 1, 1939. Dr. Dormmüller, Minister of Transport, and Count Schwerin von Krosigk, Minister of Finance, have issued an order covering temporary measures to apply until the new consultative committee and bond holder representatives are elected, as well as to cover the purchase of properties from members of the public.

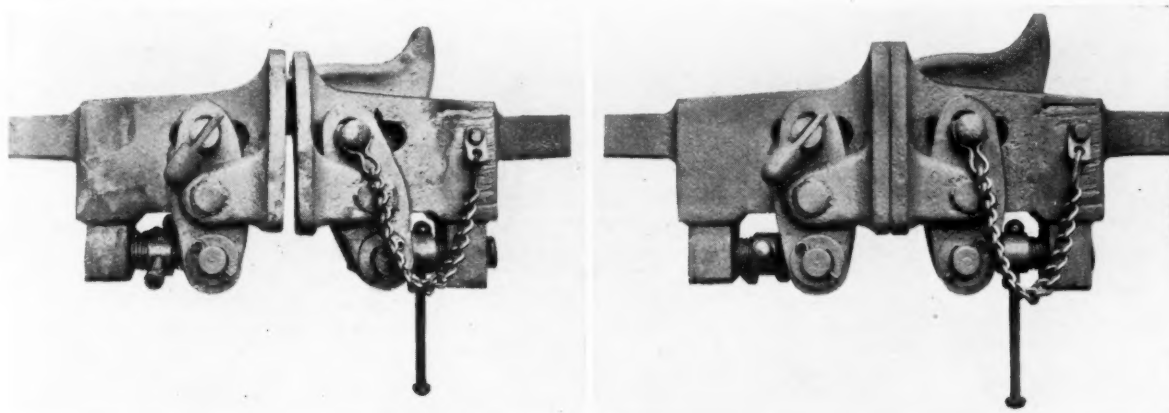
## NEW WESTERN AUSTRALIAN ADJUSTABLE COUPLER

*A description of this uniform-headed coupler and its advantages, with some comparative notes on the Indian Jones-Watson pivoted adjustable coupler*

A NEW type of adjustable coupler is now being fitted to the passenger stock of the Western Australian Government Railways for use on the more important passenger trains. The problem presented to the administration was to provide a coupler that would not only take up all slack between the buffing faces, but would also be able to engage with the old non-adjustable type of

the Jones-Watson coupler, standardised on the Indian metre-gauge lines about 30 years ago, would meet the requirements.

Whereas the latter probably gives much more flexibility sideways—an important asset where sharp curves and turnouts are prevalent—due to the buffer head being pivoted, it suffers from the fact that adjacent couplers



General views of new Western Australian Government Railways uniform-headed coupler, showing it (left) slack-coupled for shunting and (right) close-coupled for running

“chopper” hook coupler, without any special adapter. Specialist firms were asked to submit designs to meet the case, but none was considered satisfactory. One of the engineers of the Mechanical Branch of the railways, however, evolved the coupler seen in our illustrations, and this is now being standardised. It proved to be the complete solution to the problem, providing a 2-in. range of adjustment with all parts new, sufficient to take up all wear for a long period, especially with the reduced wear it ensures. Lessening of the risk of breakage due to shock, and greatly improved riding of the stock are primary advantages secured, and the new and old types of coupler can be used together.

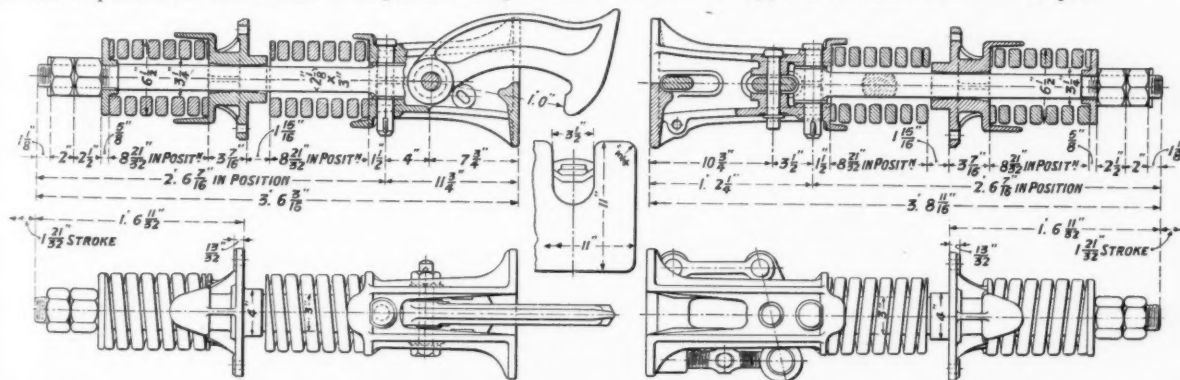
### Comparison with the Jones-Watson Coupler

From an examination of the conditions imposed and of the requirements demanded, it might be thought that

have to have male and female heads as shown in the accompanying diagrams. The hook in the Indian coupler is at one end of the vehicle and the adjustable coupling buffer at the other, and consequently all stock must run in the same direction.

The new Western Australian Government Railways coupler, on the other hand, has a uniform type of head and a hook that can be easily changed from one coupler to the other. There would, however, appear to be no reason why the advantages of both types should not be combined, and the Western Australian coupler be fitted with the Indian pivoting arrangement.

We are indebted to the courtesy of Messrs. Rendel, Palmer & Tritton, Consulting Engineers, for the details and the diagrams of the Jones-Watson coupler which we have reproduced for the purposes of a comparative study with the new type of Western Australian coupler.



Jones-Watson coupler, standardised on metre and narrower-gauge lines in India; note lateral flexibility. Left: male head with hook, and (right) female head with screw tightening

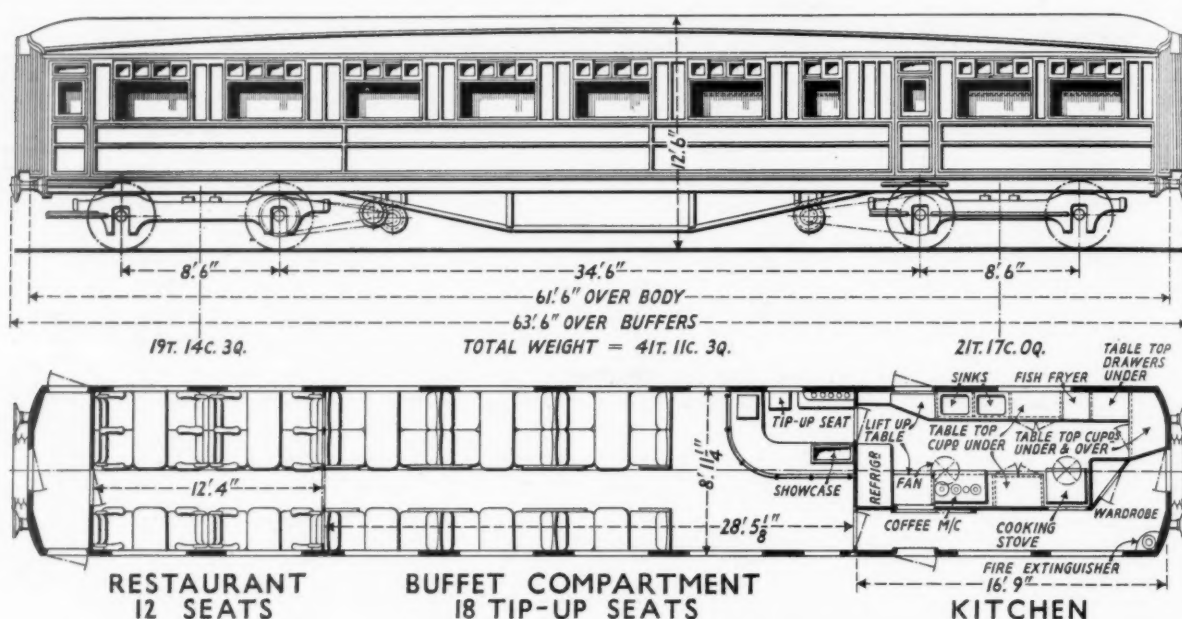
## NEW L.N.E.R. BUFFET-RESTAURANT CARS FOR YORK-SWINDON SERVICE

*Providing substantial meals or light refreshments in a practical and tasteful way*

**T**WO new vehicles known as buffet-restaurant cars have been specially built for the important through service between Aberdeen and Penzance, operated by the L.N.E.R. and the G.W.R. This through service, which was a notable feature of the 1921 winter train services, was arranged by the Eastern group of railways and the G.W.R., and inaugurated on September 29 of that year.\* The train leaves Aberdeen at 10.20 a.m. each

The floor of the buffet portion is covered with Gescocork tiles and the screen separating the buffet portion from the dining saloon is provided with Perspex panels so that the staff can have a clear view the full length of the car. The walls of the saloons are finished in coloured Rexine relieved by bands of anodised aluminium.

A large combined kitchen and pantry is provided for service to both saloons, and the cooking is carried out



*Elevation and seating arrangements of buffet-restaurant car built by the L.N.E.R. for operation between York and Swindon on the Aberdeen-Penzance service worked in conjunction with the G.W.R.*

week day, and by way of Edinburgh, York, Sheffield, and Banbury, passes to the Great Western line. The restaurant car service between York and Swindon is provided by the L.N.E.R., and in order that facilities might be available for the provision of substantial meals or light refreshments the two new vehicles, which combine the services of a restaurant car with those of a buffet car, have been constructed.

### Seating Arrangements

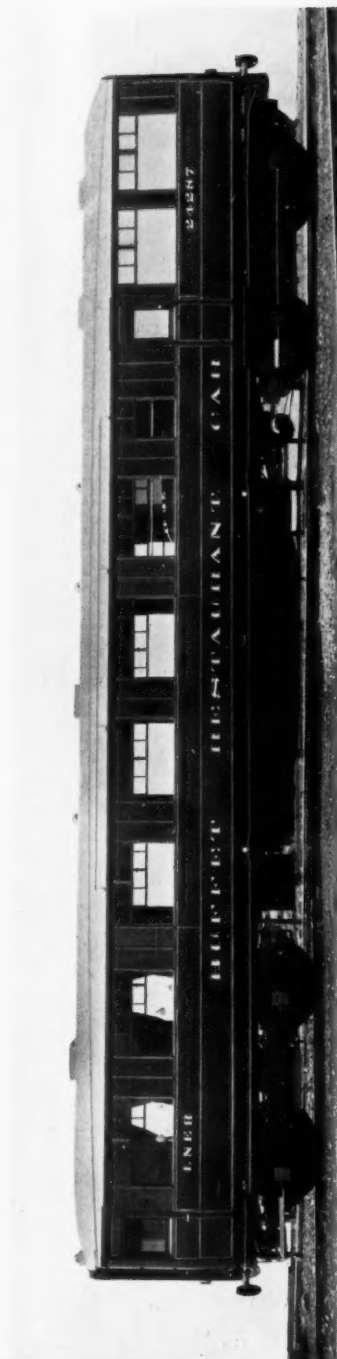
The cars were constructed at the Doncaster and Dukinfield works of the L.N.E.R., to the designs of Sir Nigel Gresley, Chief Mechanical Engineer. There are two saloons in each vehicle, one arranged for dining purposes with accommodation for twelve passengers, having seats and tables of the usual restaurant car type; while the other is arranged on similar lines to a buffet car and fitted with fixed seats of a special design. These seats are upholstered in green leather and the seat adjacent to the gangway is hinged to facilitate access to the tables. There is accommodation for eighteen seated passengers, while further standing room is available at a small bar.

entirely by electricity. The Stone-Wilson cooking stove in the kitchen comprises a roasting oven, three boiling plates, and two grills. Other equipment includes a separate fish fryer, a Still's automatic boiler for tea and coffee, and a large electric refrigerator. The power is derived from two 10-kW axle-driven generators suspended beneath the vehicle, and an Exide Ironclad battery of 210 amp.-hr. capacity provides current while the train is stationary. The cars are of L.N.E.R. standard teak construction and are fitted with Buckeye couplers and Pullman vestibules; they are mounted on L.N.E.R. standard compound bolster bogies. The weight of each vehicle is 41 tons 11 cwt. 3 qr.

With this introduction of both buffet and restaurant services in a single vehicle, the L.N.E.R. carries a step further the policy inaugurated by the provision of separate buffet and restaurant cars in the Flying Scotsman trains placed in service last summer. This was the first time such dual catering facilities had been provided on a British express. On the Penzance—Aberdeen service, southbound passengers enjoy the facilities of the buffet-restaurant car between 6.22 and 11.32 p.m., and northbound between 6.15 and 11.33 p.m.

\* See THE RAILWAY GAZETTE of October 7, 1921

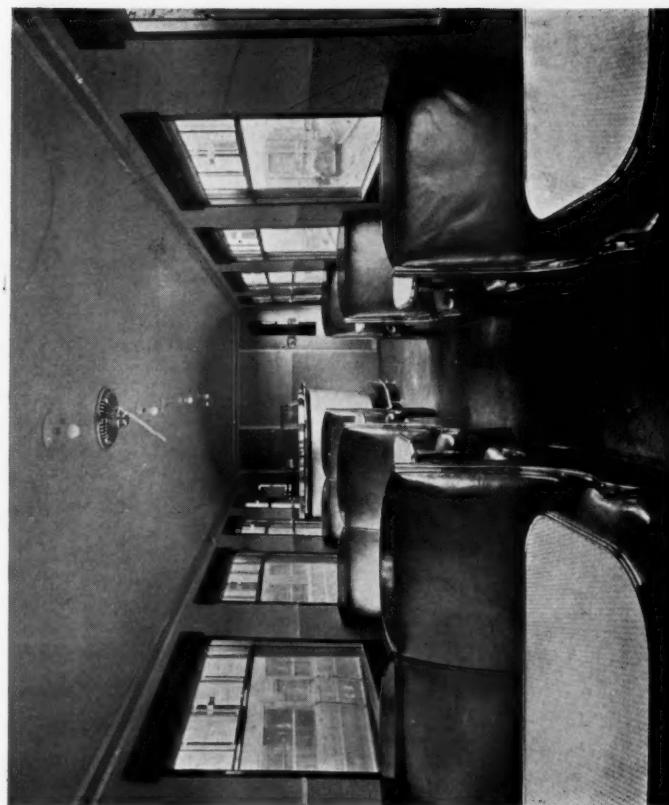




*General view of new vehicle for light refreshments or full restaurant service*



*Inside the restaurant section of the car*



*The buffet compartment, with bar in background*

**BUFFET-RESTAURANT CAR FOR PENZANCE-ABERDEEN SERVICE**

*(See article opposite)*



*General view of the new bridge; old bridge on extreme right*



*End views of spans showing (left) track and details of fabrication of steelwork, and (right) pier cap and cantilevered roadways*



*NEW NILE BRIDGE AT NAG HAMADI, EGYPTIAN STATE RAILWAYS*

## NEW NILE BRIDGE, EGYPTIAN STATE RAILWAYS

*To take heavier loads, an entirely new bridge 1,410 ft. in length with an opening span has recently been completed over the Nile at Nag Hamadi. The old bridge is now used for road traffic*

THE old bridge carrying the main Upper Egypt line of the Egyptian State Railways over the River Nile at Nag Hamadi was opened in 1897. It was designed for locomotives having a maximum axle load of 16 tons, but the subsequent growth of traffic necessitated a progressive increase of the loads so that by 1932 axle weights of engines working over the bridge had increased to 17 tons, necessitating a reduction of speed to 5 m.p.h. while crossing the bridge. To overcome the inconvenience of this speed restriction and the limited loads of which the comparatively light engines permitted were capable, the bridge has recently been replaced.

The intensity of the traffic did not justify doubling the

The masonry work necessitated 8,650 cu. m. of concrete, and cost a total of £E57,000. The caissons were made hollow to reduce the pressure on the soil, and their walls were stiffened by horizontal reinforced concrete slabs. Upon them mass concrete piers were built faced with concrete blocks.

The six fixed spans of 65 m. and the 58-m. swing span are all of the same through type Warren girders with verticals, having a height of 8.00 m. throughout. Siemens Martin steel 44 was specified for the work, raising the safe stress to 16 kg. per sq. mm., resulting in a considerable economy on the weight. The weight of each of the fixed spans amounted to 244 tons excluding the roadways



*Span No. 1 being floated out to site*

track south of Sohag, km. 467, and therefore, the bridge was designed to accommodate a single line capable of carrying the heaviest locomotives envisaged with axle loads of 22 tons, as well as two side roadways for 6-ton lorries.

An irrigation project for training the river at Nag-Hamadi included widening the bed, and the new bridge was therefore designed with a length of 430 m. (1,410 ft.) as against the 380 m. (1,246 ft.) of the old one. Economic considerations of the cost of the piers and the steel-work led to fixing the spans at 65 m. (213 ft.) each, and the bridge was therefore designed and built of six such fixed spans and one swing span of 58 m. (190 ft.) providing two navigable channels, each 24.50 m. wide.

Measurements of the current showed that the axis of the new bridge should be inclined at 9 deg. to the old one; and in consequence it became necessary to divert the main line and build a new passenger station, the old station being retained for goods traffic only.

The depth of the channel at the site of the bridge reaches 23 m. and compressed air caissons were therefore indicated. The caissons were sunk to layers of sand and gravel which could be safely loaded up to 5 kg. per sq. cm. The reduced levels above datum of their bottoms vary from R.L. 32.00 for the caissons of the swing span at the deepest part of the channel to R.L. 45.00 for the abutments. The water levels vary from R.L. 64.50 to R.L. 70.00 m. during the high floods. The caissons were lowered from scaffoldings on two floating barges, as the depth of water and the strong current during the Nile flood would have increased the cost and risk of using fixed scaffoldings for the purpose.

which weighed 52 tons. The total weight of the steel used was 2,100 tons and cost £E63,000.

The Belgian firm of Baume & Merpent was entrusted with the execution of the bridge according to railway administration's design, at a total cost of £E137,000. The order was placed on June 1, 1936, and in November of that year the first caisson was under pressure.

The caissons were erected on the eastern bank and floated to position, and lowered from the two barges fixed to anchor blocks. Compressors erected on barges were able to feed one or two caissons at a time. In the deep parts, the pressure had to exceed 3.5 atmospheres and it is noteworthy that the whole work under compressed air was accomplished without accident. During the flood of 1937 the work had to be suspended after the sinking of four caissons, but the remaining five caissons were completed before the flood of 1938.

Temporary stagings were made for the erection of the three eastern spans, Nos. 7, 6, and 5, where the depth of water did not exceed 6 m. The remaining spans were erected on the staging of span 5, and floated on two barges to their final positions. This procedure, adopted for the first time in Egypt, proved to be very satisfactory and had the advantage of saving falsework which would have attained depths of 20 m. The swing span was erected by cantilevering from the central part on the tower pier.

The bridge was completed in April, 1939, according to programme, and the cost of £E300 a metre run (including roadways) marks a record in economy for single line bridges over the Nile. The last one was built in 1930-32 at Edfina and cost £E450 a metre run.



*Right: Fig. 1—Fixture used for final bedding of radial bearing brasses and assembly operations*



*Below: Fig. 2—Operators bedding connecting rod big end brasses on mobile fixtures*



**SPECIAL FIXTURES AT HORWICH WORKS, L.M.S.R.**

*(See article opposite)*

## SPECIAL FIXTURES AT HORWICH WORKS, L.M.S.R.

### Fitting brasses and other details

(See illustrations on opposite page)

CONSIDERABLE economies in time and labour may be effected in locomotive and other engineering establishments by the use of special fixtures for holding the work during finishing and assembly operations. A large field for ingenuity is afforded in designing such fixtures, which to be really useful must allow of the component part operated upon being turned or otherwise moved into different positions to facilitate access to the surfaces requiring treatment. Some of the fixtures are transportable, thus enabling them to be taken to the work at different locations in the shop, whilst in other cases the work has to be brought to the fixtures. Sometimes, again, lifting appliances are incorporated with the fixture, and it is only when an investigation is made and the conditions generally studied that a true realisation of the value of such appliances can be obtained.

Among the fixtures in use at the Horwich locomotive works of the L.M.S.R. are the two illustrated. That shown in Fig. 1 has been designed to facilitate the final bedding of bearing brasses and assembly to the wheels of the main casting, brasses, check spring buckles, bolts and brackets. In the illustration the operator is seen scraping the radial brasses. The fixture comprises a hydraulic cylinder 23-in. bore by 28-in. stroke, having a lifting capacity of 3½ tons, with an adapter to suit the standard radial casting; the hydraulic control valves are conveniently placed near the operator. The hydraulic cylinder is sunk into the bottom of the engine pit and the adapter placed at a suitable height to allow the radial wheels to be run into position for the assembly operation. The objects of the fixture are (i) to eliminate crane lifting; and (ii) to facilitate the bedding of the radial brasses and the assembly of details. The hydraulic cylinder is sufficiently powerful to lift the wheels, radial brasses, and casting clear of the rails so that the wheels can be rotated on their bearings and any inaccuracies of the bearing easily ascertained and rectified.

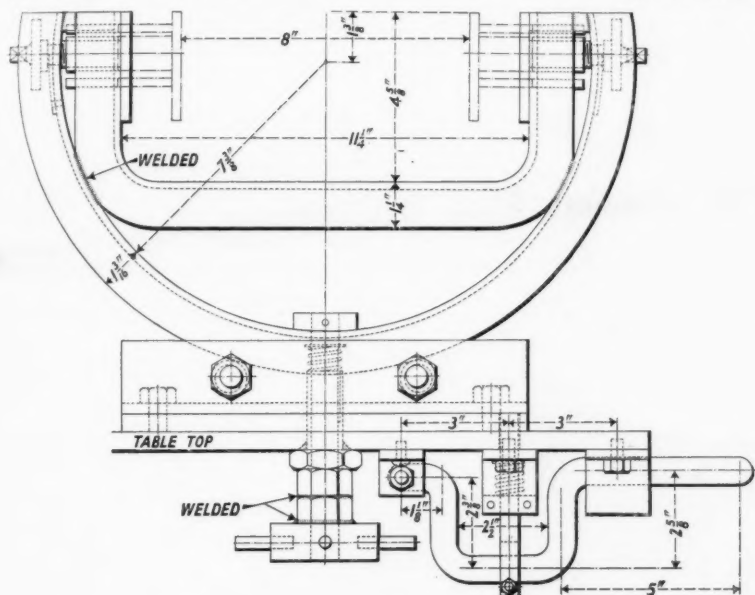


Fig. 3.—Movable jig for holding big end brasses

### Big End Connecting Rod Brasses

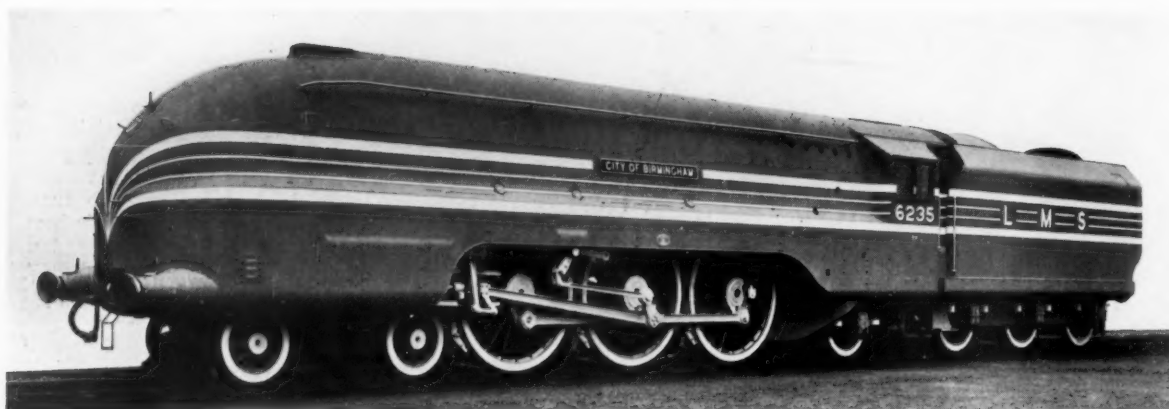
Fig. 2 shows two operators bedding connecting rod big end brasses on a mobile fixture. This comprises a carriage mounted on castors, a turntable 12½-in. dia., and a semi-circular cradle 16½-in. dia., with a suitable tray for files and scrapers. The turntable can be rotated 360 deg. in the horizontal plane and the cradle 180 deg. in the vertical plane; suitable locking devices are fitted to the cradle and turntable. The object is to eliminate bench work and facilitate assembly, as the fixture can be taken to the wheels and all work done on the site. The drawing (Fig. 3) shows in detail the movable jig used for holding the big end brasses.

### American Rail Production

Statistics compiled by the American Iron and Steel Institute show that the production of steel rails by American mills in 1938 was the lowest for five years past, amounting only to 622,895 tons, as compared with 1,445,739 tons in 1937. The lowest productions on record were in 1932 and 1933, when 402,566 and 416,296 were the respective aggregate tonnages rolled; these figures compare with peak totals of 3,217,649 tons in 1926, and no less than 3,977,887 tons in 1906. Indeed, from 1900 to 1929 the annual quantities of rail manufactured in U.S.A. mills were almost without exception above two million tons. As has been the case now for many years, almost all the rail production in America in 1938 was from open hearth steel, the Bessemer production having been negligible; of the total, however, 14,974 tons of light

rails were re-rolled from old worn rails. The fact that this last-mentioned figure is, with one exception, the lowest on record, shows that a reduced tonnage of worn rails has been available for re-rolling, and the inference is that, as in Great Britain, rails are being allowed to wear down in the tracks to a greater degree than previously, or that the railways are making more extensive use than before of rails recovered from main lines for the re-railing of secondary lines and sidings. It is significant of present-day tendencies that only 338 tons out of the total American rail production of 1938 were alloy steels; this indicates that, again as in Great Britain, American railways are finding medium manganese rails, with the safeguard of retarded cooling, and the advantage, where required, of heat treatment, to meet present needs more economically, but not less efficiently, than those alloyed with other metals.

*A goods train derailed near Benalla, Australia, after floods had weakened the embankment. The driver and fireman both escaped serious injury*



*"City of Birmingham," the first of 20 streamlined 4-6-2 locomotives being built this year at Crewe by the L.M.S.R., has just been put into traffic*



*Detectives from the Special Branch of Scotland Yard searching among the debris in the cloakroom at King's Cross station, L.N.E.R., after the bomb explosion on July 26*



## RAILWAY NEWS SECTION

### PERSONAL

Lord Runciman, Lord President of the Council, has resigned his directorship of the London Midland & Scottish Railway Company. It is understood in regard to his other directorships that his position conforms to the requirements of the Prime Minister's statement in the House of Commons that he had already taken the necessary steps to see that his Cabinet colleagues should not hold any directorships except in purely family concerns or in companies not primarily engaged in trading. The other directorships that Lord Runciman has resigned are of David MacBrayne Limited; MacBrayne's Trust Limited; Moor Line Limited; Runciman (London) Limited; and the Runciman Shipping Co. Ltd.

#### G.W.R. APPOINTMENTS

The Great Western Railway announces the undermentioned appointments at its South Wales Docks to take effect as from August 28 next.

Mr. L. E. Ford, Dock Manager, Cardiff and Penarth Docks, to be Principal Assistant to the Chief Docks Manager, Cardiff.

Mr. H. B. Smith, Dock Manager, Newport Docks, to succeed Mr. L. E. Ford as Dock Manager, Cardiff and Penarth Docks.

Mr. J. T. Edmunds, Dock Manager, Port Talbot Docks, to succeed Mr. H. B. Smith as Dock Manager, Newport Docks.

Mr. T. Carpenter, Assistant Dock Manager, Barry Docks, to succeed Mr. J. T. Edmunds as Dock Manager, Port Talbot Docks.

Mr. W. Jeffers, Outdoor Assistant (Coal, Shipping, and Traffic), Cardiff Docks, to succeed Mr. T. Carpenter as Assistant Dock Manager, Barry Docks. (Other G.W.R. appointments, p. 184).

By a Decree issued by the Argentine Ministry of Public Works, Dr. Francisco Costa Paz has been officially recognised as Legal Representative of the Buenos Ayres & Pacific Railway.

We regret to record the death on July 30 of Sir Charles Blair Gordon. President of the Bank of Montreal and a Director and Member of the Executive Committee of the Canadian Pacific Railway Company. Among his many other appointments were directorships of the Canadian Pacific Express and American Locomotive Companies.

The Minister of Transport, Captain the Rt. Hon. Euan Wallace, M.C., M.P., has appointed Mr. C. A. Birtchell to be a Principal Assistant Secretary and Mr. A. Clark to be an Assistant Secretary.

Mr. L. E. Ford, Dock Manager, Cardiff and Penarth Docks, G.W.R., who as recorded on this page has been appointed Principal Assistant to the Chief Docks Manager, Cardiff, joined the Divisional Superintendent's Office at Cardiff, Great Western Railway, in 1912. In 1914 he enlisted in the Welsh Regiment, but in the next year accepted a Commission in the 2nd Battalion, Monmouthshire Regiment. From 1919 to 1921 Mr. Ford held various posts in the Traffic Department, London Division, in the Office of the Superintendent of the Line, in the

appointed Dock Manager, Newport Docks, began his railway career in July, 1905, when he entered the General Manager's Office of the Alexandra (Newport) Docks & Railway Company. Two years later he was transferred to the General Cargo Department, where he served in various capacities. In 1922, shortly after the company was amalgamated with the Great Western Railway, Mr. Edmunds became Chief Clerk to the Newport Dock Manager. He was promoted in October, 1928, to be Assistant Dock Manager, Newport. In January, 1933,



**Mr. L. E. Ford**

Appointed Principal Assistant to the Chief Docks Manager, G.W.R.



**Mr. J. T. Edmunds**

Appointed Dock Manager, Newport, Great Western Railway.

Office of the District Goods Manager, Birmingham, and at stations in that district. He was also included in the first quota of "special trainees" introduced in 1921. In 1923 he was appointed Personal Clerk to Sir Felix Pole (General Manager), and was transferred to the Docks Department that December, when he was attached to the Chief Docks Manager's Office in charge of the New Works Section. Mr. Ford was promoted to be Outdoor Cargo Assistant to the Dock Manager, Cardiff, in 1926, and Assistant in Charge, Penarth Docks, two years later. He went to Swansea in 1929 as Assistant Dock Manager. In 1933 Mr. Ford went to Port Talbot as Dock Manager, and in June, 1938, he was appointed Dock Manager, Cardiff and Penarth Docks, the position he now relinquishes.

Mr. J. T. Edmunds, Dock Manager, Port Talbot Docks, G.W.R., who as recorded on this page has been

he went to Swansea as Assistant Dock Manager. While at Swansea, Mr. Edmunds was a member of the Executive, Negotiating, and other committees of the Swansea Port Employers' Association. In June, 1938, he was appointed Dock Manager, Port Talbot. It is from Port Talbot that Mr. Edmund goes to Newport Docks.

Mr. E. P. S. Gardner has been appointed Chief Engineer and Sales Manager of the Quasi-Arc Co. Ltd. He joined the firm in 1925, since when he has been engaged in the Research and Technical Service Department. Mr. Gardner is a member of five technical committees of the British Standards Institution and six research committees of the Institute of Welding.

#### INDIAN RAILWAY STAFF CHANGES

Mr. F. V. Mahony has been appointed to officiate as Controller of Stores, N.W.R., as from June 2.

Mr. H. H. Cooper has been appointed

to officiate as Superintendent of Mechanical Workshops, N.W.R., as from June 1.

Mr. H. M. Walker has been appointed to officiate as Deputy Chief Mechanical Engineer, N.W.R., as from July 31.

Mr. S. H. P. Lincke has been confirmed as Controller of Stores, G.I.P.R., as from June 17.

Mr. J. W. Henderson has been appointed to officiate as Deputy Chief Operating Superintendent, N.W.R., as from June 1.

Mr. L. W. Van Someren, Traffic Manager, E.B.R., has been granted 4½ months' leave preparatory to retirement as from July 13.

Sir Bernard Docker has been appointed a Director of the Birmingham Small Arms Co. Ltd.

Mr. W. L. Davies, Chief Outdoor Representative attached to the G.W.R. District Goods Manager's Office at Swansea, has been appointed a Justice of the Peace for Swansea.

Mr. John Patrick Herdman, of Sion Mills, Co. Tyrone, has been co-opted a Director of the Great Northern Railway (Ireland) in place of the late Mr. Maxwell Scott Moore.

Mr. Roger Sewill (Roads) and Mr. A. E. Sewell (Railways) are nominated Chairmen of the Northern Regional Committee for Road-Rail Traffic Co-ordination.

Mr. George Ricks, an Advertising Inspector on the Great Western Railway who has just retired, has seen 45 years' service with the company.

Added to his father's record of 49 years and his brother's of 37 years in G.W.R. service, Mr. Ricks's family can now claim to have served the Great Western Company for a total of 131 years.

#### G.W.R. APPOINTMENTS

The following appointments are announced by the Great Western Railway:—

Mr. T. C. B. Davies, Assistant Divisional Engineer, Wolverhampton, to be Divisional Engineer, Gloucester (from October 1).

Mr. G. Thomas, Assistant Divisional Engineer's Office, Wolverhampton, to be Assistant Divisional Engineer, Wolverhampton (from October 1).

Mr. G. R. Smith, Assistant Divisional Engineer, Cardiff, to be Assistant Divisional Engineer, Paddington (from October 1).

Mr. R. H. Edwards, Assistant Divisional Dock Engineer, Barry Docks, to be Assistant Divisional Engineer, Cardiff (from October 1).

Mr. H. G. Lakeman, Assistant, Cardiff Docks, to be Assistant Divisional Dock Engineer, Barry Docks (from October 1).

Mr. R. F. Hurford, Clerk, Office of the Superintendent of the Line, Paddington, to be Trade Advertising Agent, Paddington (from August 16).

Mr. A. Bond, Chief Clerk, Chief Goods Manager's Office, Paddington, to be Indoor Assistant, Chief Goods Manager's Office, Paddington (from August 28).

From *The London Gazette* of August 1: Regular Army Supplementary Reserve of Officers, Corps of Royal Engineers, Transportation:—

A. H. Earley to be Captain (August 2).

R. R. Ellis (late Cadet-Sergt., Liver-

pool Collegiate School Contgt., O.T.C.) to be Lieutenant (August 2).

The undermentioned to be second lieutenants:—

W. B. Draper (late Cadet-Sergt., Aldenham School Contgt., O.T.C.), R. H. Murdoch (late Cadet-Sergt., University Coll. Sch. Contgt., O.T.C.), A. G. C. Trollope (late Cadet-Corpl., Charterhouse Sch. Contgt., O.T.C.), J. N. Robinson (late Cadet, Berkhamsted Sch. Contgt., O.T.C.), G. Troy (late Cadet, Victoria Coll. Contgt., O.T.C.).

### Forthcoming Events

Aug. 18-20.—Institution of Railway Signal Engineers, at Nottingham, Summer Meeting.

Aug. 19 (Sat.).—Stephenson Locomotive Society (London), 10 a.m. Visit to Crewe Works, L.M.S.R.

Aug. 26 (Sat.).—Institutions of Civil and Mechanical Engineers. Visit to United States and Canada.

### G.W.R. Claims Prevention Posters


In successive issues of THE RAILWAY GAZETTE from July 24 to October 9, 1936, and again from February 19 to May 14, 1937, we reproduced in our "Scrap Heap" columns the latest "claims prevention" posters issued by the Great Western Railway for exhibition to the staff as part of a drive to reduce breakages and waste and to inculcate economy. Another series of such posters has now appeared, from which we reproduce below three representative specimens. Incidentally, for the next series the Claims and Salvage Agent of the Great Western Railway offers a prize for the best outline submitted of a suitable poster on the subject of "claims prevention."



**CUSTOMERS  
DEMAND  
PROMPT  
DELIVERIES  
WITHOUT  
EXCEPTION  
PLEASE.**

SERVICE is the backbone of our organisation and it is only by efficient service day in and day out that we can hope to increase revenue.


**IT'S UP TO YOU!**



That odd sheet tie lying on the ground!	Pick it up and use it.
Those labels you didn't use yesterday!	Don't leave them lying about to get dirty and dog-eared.
The clean straw from that recently unloaded wagon or container!	It can be used again.

Waste not Want not!

Money saved is money earned!



<b>DRAW</b> that sheet carefully over the truck without damaging the goods in it.	X.
See that every package is so handled and stowed that it will reach <b>HOME</b> safely	1.
Load all packages <b>AWAY</b> to their correct destination.	2.

## Railway Wages

The following grades will receive immediate increases under the decision :—

Grade	Area	New base rate s. d.
<i>Traffic Department—</i>		
Leading Porter ...	L....	46 6
Porter, Grade 2 ...	L....	45 0
Station Lampman	All	45 0
<i>Goods Department—</i>		
Caller Off	R....	46 0
Crane-man (under 5 tons)	R....	46 0
Roper ...	R....	46 0
Sheeter ...	R....	46 0
Loader ...	R....	46 0
Numbertaker ...	R....	46 0
Capstanman ...	R....	46 0
Round Timber		
Loader	R....	46 0
Scaleman ...	R....	46 0
Shunt Horse Driver	R....	46 0
<i>Permanent Way Department—</i>		
Labourer ...	I. ...	46 0
" ...	R....	45 0
Lengthman ...	I. ...	46 0
" ...	R....	45 0
Relayer ...	I. ...	46 0
" ...	R....	45 0
Sub-Ganger ...	I. ...	47 0
" ...	R....	46 0
Patrolman ...	I. ...	47 0
" ...	R....	46 0
Inspector's Time-keeper's Assistant	I. ...	47 0
Inspector's Time-keeper's Assistant	R....	46 0
<i>Locomotive Department—</i>		
Ashfiller ...	All	45 0
Barman ...	All	45 0
Caller Up ...	All	45 0
Lampman ...	All	45 0
Lamp Trimmer ...	All	45 0
Sandman ...	All	45 0
Shed Labourer ...	All	45 0
<i>Carriage and Wagon Department—</i>		
Axle Box Cleaner ...	L....	46 0
" " " "	I. & R.	45 0

R. = Rural Areas

In the circumstances and recognising the deep resentment of our members against this intolerable position, we decided to instruct the General Secretary to inform the companies that we have no alternative but to resort to other methods to compel them to recognise the justice of our claims.

Grade	Area	New base rate s. d.
Brasser ... ..	L....	46 0
" " " " " "	I. & R. ...	45 0
Oilier and Greaser ...	L....	46 0
" " " " " "	I. & R. ...	45 0
Carriage Cleaner ...	L....	46
" " " " " "	I. & R. ...	45 0
Carriage Washer ...	L....	46 0
" " " " " "	I. & R. ...	45 0
Train Electric Light- ing Examiner's Assistant ...	L....	46 0
Train Electric Light- ing Examiner's Assistant ...	I. & R. ...	45 0
<i>Signal and Telegraph Department—</i>		
Labourer ... ..	I. ...	46 0
" " " " " "	R....	45 0
Trimmer (Lake Steamers)	—	45 0
<i>Canal Staff—</i>		
Carter ... ..	R....	45 0
Dredger Fireman ...	I. ...	45 0
" " " " " "	R....	45 0
Lockkeeper ... ..	I. ...	45 0
" " " " " "	R....	45 0
" " and Lengthman	I. ...	45 0
" " " " " "	R....	45 0
Dredgerman ... ..	I. ...	45 0
" " " " " "	R....	45 0
Labourer ... ..	I. ...	45 0
" " " " " "	R....	45 0
Porter ... ..	L....	45 0
" " " " " "	I. & R. ...	45 0
Watchman ... ..	L....	45 0
" " " " " "	I. & R. ...	45 0
Reservoir Attendant	R....	45 0
Stableman ... ..	R....	45 0
Toll Collector ... ..	R....	45 0
" " and Lengthman	R....	45 0
Reservoir Attend- ant's Assistant ...	I. ...	45 0
Reservoir Attend- ant's Assistant ...	R....	45 0
Sub-Ganger ... ..	I. ...	45 0
" " " " " "	R....	45 0

On Wednesday the general managers accepted the suggestion of a further meeting with the union, to be held today.

Grade	Area	New base and current rate
Engine cleaner (Age 20 and 21 yrs.)	... All	45 0
Porter, Grade 2	... I. & R.	45 0
Crossing Keeper	... All	45 0
Goods Porter	... R.	45 0
Porter, Grade 1	... All	47 0
Leading Porter	... I. & R.	46 0

(I. = Industrial Areas) (R. = Rural Areas)



## RAILWAY AND OTHER MEETINGS

### Gloucester Railway Carriage & Wagon Co. Ltd.

The ordinary general meeting of the Gloucester Railway Carriage & Wagon Co. Ltd. was held on July 31 at the registered office of the company, Bristol Road, Gloucester, Mr. H. Leslie Boyce, M.P., chairman of the company, presiding.

The Chairman, in proposing the adoption of the report and accounts, expressed his pleasure in being able to state that the year under review had been the most satisfactory in the long history of the company. Only once before had the accounts shown a higher net profit—namely, for the financial year ended May 31, 1920, but as the surplus of revenue that year included a large profit on the sale of their entire wagon fleet, which subsequently reverted to the company, it could not be regarded as having been successful when viewed from the standpoint of earnings derived from the ordinary and legitimate trading activities of the company. The Chairman explained that the past year's profit of £162,964 was the result of a highly successful year in every department of the company's business, and to no other cause could it be attributed. All their profit had been derived from purely peace time trading, as they had executed no armament work during the period under review. The company had been able to set aside such an amount against profits for income-tax and N.D.C. purposes that no tax would be payable on any part of profits shown in the accounts they had before them.

The Chairman thought it could be fairly said that the recovery of the company to its present position was the logical outcome of the progressive, yet conservative, policy pursued since the reconstruction of the board eight years ago. For five or six years they had had to contend both with acute difficulties which they had inherited, and with a severe economic depression.

During the financial year just ended, hundreds more of their wagons, which had been let for periods of years at very low rates during the depression, continued to "come off-hire" and "went through the re-letting gate" at better hiring rates. Fortunately, they had been well placed before the recent succession of international crises and during the past year had received a fair share of rolling stock orders from overseas. The Chairman said that they looked forward to the day when removal of exchange restrictions would enable their valued customers, the South American railways, once again to be in a position to place orders with them. Meanwhile, their reputation, competitive power, and thrust for new business, continued to keep them in the forefront of the rolling stock industry.

After speaking of the firm's capacity

to undertake even more orders than the satisfactory number they had in hand, the Chairman said that before the end of the current financial year, they would commemorate the eightieth anniversary of the laying of the foundation stone of the works by the first Chairman of the original company, Mr. Richard Potter, on April 10, 1860. They had embarked on their eightieth year with a larger and better equipped works than ever before, and they now claimed that their shops were among the finest in the country. When the company and its subsidiary were busy, as they had been for twelve months and would be for at least another twelve, they employed directly 1,500 persons or more. In order that they might strengthen the firm's reserves to withstand successfully any economic blizzards in the future, the directors were recommending that £100,000 of the balance of profit, which they were to

dispose of that day, be added to the existing reserve to make a total of £186,441. He had no doubt that the stockholders would agree with another of the directors' recommendations, that £5,000 be transferred to the company's staff superannuation fund, and to this end would be content to receive a final dividend of 10 per cent., making 15 per cent. for the year, less income tax.

Before he concluded, the Chairman expressed the gratitude of his colleagues and himself to their very able Managing Director, Mr. T. L. Squires, and to every member of the staff, for their service to the company. He referred to the retirement during the year of Mr. A. E. Allen, the Manager of their Wagon Department, who had been with the company for nearly 50 years; all, he felt sure, would join with him in wishing Mr. Allen a happy retirement. They were confident that his son, Mr. John Allen, who had been appointed to succeed him, would be a worthy successor to his father.

The reports and accounts were unanimously adopted, and the meeting closed with a vote of thanks to the Chairman.

### Sessional Programme, 1939-40, of the Institute of Transport

Mr. T. E. Thomas will deliver his Presidential Address at the opening meeting of the forthcoming session of the Institute of Transport, to be held at the Institution of Electrical Engineers, London, on Monday, October 9, 1939, at 5.30 p.m. Other meetings to take place in London are:—

#### Ordinary Meetings Mondays at 5.30 p.m.

- 1939  
Nov. 13—"Pooling schemes as a factor in transport developments," by Sir William Wood, a former Vice-President.  
Dec. 11—"Modern station design," by G. Ellison, O.B.E., Member of Council. (Preceded by the Annual General Meeting.)

- 1940  
Jan. 8—"Co-ordination of port facilities," by M. J. Watkins, Member.  
Feb. 12—"A shipping subject by Philip Runciman, Chairman, Anchor Line Limited.  
Mar. 11—"The ultimate sphere of road haulage," by R. A. B. Smith, M.C., Member.  
Apr. 8—"Legislation and omnibus design," by G. W. Hayter, O.B.E., Member.

#### Lectures and Informal Meetings. Tuesdays at 5.30 for 6.0 p.m.

- 1939  
Oct. 17—"Insurance and transport," by H. R. Dean (Lecture).  
Nov. 28—Brancker Memorial Lecture.  
Dec. 19—"State subsidies for transport," by A. H. Earley, Graduate. (Informal meeting.)

- 1940  
Jan. 16—"Trans-oceanic travel of the future—by sea or by air?" by T. A. Bushell, Associate Member. (Informal meeting.)

#### 1940

- Feb. 20—"Road pattern for London," by Sir Charles H. Bressey, C.B., C.B.E., former Member of Council. (Open Lecture.)  
Mar. 19—"The voice of the travelling public," by A. F. R. Carling, Associate Member. (Informal Meeting.)  
Apr. 16—"International aspects of British railway organisation," by R. H. Hacker, Member. (Lecture.)

#### Joint Meeting with the Institution of Electrical Engineers Thursday at 5.30 for 6.0 p.m.

- 1939  
Nov. 9—"The trolleybus," by G. F. Sinclair, M.I.E.E., M.Inst.T.

LOANS TO NORTHERN IRELAND TRANSPORT BOARD.—Government guarantees of borrowings by the Northern Ireland Road Transport Board have been implemented to the extent of £280,000 it is shown in the Exchequer returns of July issued on Monday. This amount represents the total of the loans issued by the banks to the board under the Government guarantee. The returns show that the total ordinary revenue for the four months of the financial year was £10,449 below the receipts for the corresponding period a year ago. Revenue was £3,317,674, in comparison with £3,328,123 at July 31 last year. The current deficit is £338,940, against £485,522 a month ago. The yield from taxation imposed by the Government of Northern Ireland was £515,734, an increase of £30,331. Practically all of this increase was accounted for by estate duties, which produced £241,000, an increase of £30,000.

## QUESTIONS IN PARLIAMENT

### Shanghai-Nanking Railway

Mr. R. H. Morgan (Stourbridge—C.), on July 31, asked the Prime Minister whether the Japanese authorities still refused to allow the inspection and survey of the line of the Shanghai-Nanking Railway Company which was required in the interests of British bondholders; and what action he had taken in the matter.

Mr. K. A. Butler (Under-Secretary of State for Foreign Affairs): Yes, Sir. Further representations have recently been made to the Japanese Government on this subject by His Majesty's Ambassador at Tokyo.

### Report upon Railway Accidents

Mr. Ellis Smith (Stoke—Lab.), on August 2, asked the Minister of Transport what action was to be taken to carry out the conclusions of the Chief Inspecting Officer of Railways contained in the Report upon Accidents on the Railways, Cmd. 6054, in particular with regard to level crossings and the accidents to permanent way men, fitters, and wiremen.

Captain Euan Wallace (Minister of Transport): A number of schemes has been completed for dealing with public road crossings by the construction of bridges. The ease of occupation crossings is more difficult, and the railway companies have submitted a comprehensive report as a result of their investigation of over 22,000 such crossings. Until I have had an opportunity of considering the report of the Chief Inspecting Officer of Railways on the recent accident at Hilgay crossing I am unable to make any statement as to what action I can usefully take. The question of accidents to permanent way men, fitters and wiremen was recently discussed with a deputation from the National Union of Railwaymen and I have drawn the special attention of the railway companies to the conclusions of the Chief Inspecting Officer of Railways.

### Properties Left at Cloakrooms

Mr. Marcus Samuel (Putney—C.), on August 2, asked the Minister of Transport whether, in order to protect the public, he would introduce legislation to confer on the railway companies powers to secure that the contents of all properties left at cloakrooms should be displayed by the depositors before leaving them.

Captain Euan Wallace: Legislation is not required to confer on the railway companies powers to secure that the contents of properties left at cloakrooms should be displayed by the depositors before leaving them, as the companies as warehousemen are entitled to know the nature of the goods they are requested to warehouse before they are accepted. In view of recent events the companies have considered it desirable in many instances to require prospective depositors to

open packages and display the contents before packages are accepted for warehousing, and a notice of this requirement is exhibited at the cloakrooms.

### L.N.E.R. Service to Yarmouth

Mr. Granville (Eye—Nat.Lib.), on August 2, asked the Minister of Transport if he was aware that the 10.7 a.m. train from Liverpool Street to Yarmouth on July 22 arrived over two hours late on account of line-obstruction and that antiquated suburban rolling stock, without corridor communication, was used on this long-distance service, causing inconvenience and hardship to stranded passengers; and if he would consult with the company concerned with a view to improving this service.

Captain Euan Wallace: The London & North Eastern Railway Company informs me that the delay to this train, which occurred between Ipswich and Saxmundham, was due to the failure of the engine working the 9.21 a.m. relief express from Liverpool Street to Yarmouth at Wickham Market, which necessitated single line working being introduced between that place and Snape Junction. The train was composed of three corridor coaches, with lavatories, and six vehicles which are ordinarily used on suburban services. The company states that, owing to the heavy pressure on its rolling stock, it is impossible to provide corridor stock for all excursion trains on Saturdays. The company regrets the delay and inconvenience caused to the passengers on this particular train and says that it will continue to make every effort to provide corridor stock, as far as practicable, for long-distance journeys.

### Danger to Railway from Flooding

Sir William Jenkins (Neath—Lab.), asked the Minister of Agriculture, if he received a report of the serious recent flooding of the river Afan; if he will make enquiries of the danger of the colliery refuse tip in the Glynccorwg village on the Nolton estate, which might become a serious menace to the low-lying districts in the valley, to Port Talbot town and docks and railway, and whether he would take steps to erect a retaining wall to prevent the river getting behind the tip.

Sir Reginald Dorman-Smith (Minister of Agriculture), in a written reply, states:—After special inquiries into the matters referred to by the hon. Member, I am advised that comparatively little damage was done in the Afan Valley by the flooding caused by excessive rainfall between July 6 and 8. As regards the colliery refuse tip at Glynccorwg, I understand that officers of the Port Talbot local authority, the dock authority and the railway company are not satisfied that serious damage is likely to result to their interests if the river is diverted behind the tip. The river at this point

is part of the main river of the Mid Glamorgan Rivers Catchment Board. I have no power to take the action suggested in the last part of the question, but I am communicating with the catchment board.

### Dronfield Station Platform

Mr. F. Lee (Derby, N.E.—Lab.), on August 2, asked the Minister of Transport if he would call the attention of the London Midland & Scottish Railway Company to the inconvenience and danger to passengers, especially elderly and infirm passengers, caused by the very low platform at their Dronfield, Sheffield area, station.

Captain Euan Wallace: Although the platforms are low the company states that similar conditions exist at a number of other stations and that as circumstances permit they are taking steps to improve the general standard of these platforms. The average daily number of passengers using each of the two platforms at this station is about 200 and having regard to the relatively small traffic the company does not feel that it would be justified in giving priority to improvements at Dronfield, the cost of which would amount to about £850. They also state that until the matter was raised by the Urban District Council on July 4 last, no complaints appear to have been made regarding the height of these platforms.

### Boroughbridge Road and Bridge Widening

Mr. C. York (Ripon—C.), on August 2, asked the Minister of Transport whether he could state when work would commence on the road and bridge widening scheme at Boroughbridge, on the Great North Road.

Captain Euan Wallace: The scheme for the construction of two bridges over Milby Cut and the construction of a roundabout at the junction of the Great North Road and the Northallerton road has reached an advanced stage. Negotiations with the railway company are proceeding and the necessary land is being acquired but I am not at present in a position to say when the work will be begun. Details of a scheme for improving the bridge over the River Ure at Boroughbridge are being prepared.

### Accidents on Southern Railway

Brigadier-General Clifton Brown (Newbury—C.), on August 2, asked the Minister of Transport how many accidents had occurred on the Southern Railway during the last 12 months from people coming in contact with the live rail; and how many miles of the new protective fencing had been put up by the company during that period.

Captain Euan Wallace: During the twelve months ended July 27 last, eight people were killed and fifty injured on the Southern Railway through contact with the live rail. The company informs me that during the twelve months ended June 30 last they have erected 57 miles of special fencing.

## NOTES AND NEWS

**Tanganyika Railways Earnings.**—The total earnings of the Tanganyika Government Railways for the first six months of the current calendar year amounted to £257,749, as compared with £261,392 earned in the corresponding period ended June 30, 1938, a decrease of £3,643.

**Two New Coaches for L.M.S.R. Royal Train.**—The L.M.S.R. has in hand a scheme for the provision of two new saloon coaches for use on the Royal train. The internal arrangements of the new saloons have not been settled nor has a detailed scheme of decoration been decided; the coaches will, however, be of the most modern type. The Royal train now in use is 36 years old and was built for King Edward VII.

**Brighter L.N.E.R. Stations.**—Two - hundred - and - ninety - three L.N.E.R. passenger stations are being repainted and redecorated this year; over eighty of these are in the Scottish Area and include Alloa, Airdrie North, Hyndland, Clydebank Central, Craighendran, Reedsmouth, Silloth, Buckie, Portsoy, and Lossiemouth. Signal boxes and warehouses are also included in the programme, making a total number of 334 points on the L.N.E.R. system at which repainting schemes are to be carried out.

**President Roosevelt Signs Railway Reorganisation Bill.**—President Roosevelt has signed the Chandler Railroad Bill, which will facilitate the reorganisation of all the railways in the United States. In a congressional conference the Bill had reverted to its original White House version. A Reuters message from Washington says it is understood that the Baltimore & Ohio Railroad is ready for an immediate filing plan under the Bill, and that the Lehigh Valley Railroad is also likely to act speedily.

**Canadian Pacific Earnings.**—Gross earnings of the Canadian Pacific Railway for June, 1939, amounted to \$10,354,000, an increase of \$209,000 in comparison with June, 1938. Working expenses totalled \$9,291,000, or \$343,000 lower, leaving net earnings \$552,000 higher at \$1,063,000. For the first six months of 1939 gross earnings were \$61,808,000, an increase of \$520,000 in comparison with the corresponding period of 1938, and the net earnings of \$5,351,000 showed an advance of \$2,670,000.

**Canadian National Earnings.**—Gross earnings of the Canadian National Railways in June, 1939, were \$15,189,521, an increase of \$1,487,277 in comparison with June, 1938. Operating expenses amounted to \$15,201,617, with an increase of \$728,790, resulting in a deficit of \$12,096, which was, however, \$758,487 less than that registered in June, 1938. Aggregate gross earnings for the first six months of 1939 totalled

\$87,681,530, an increase of \$4,921,971 in comparison with the corresponding period of 1938, and the deficit on working was \$505,417, or \$5,174,566 lower than a year ago.

**Central Line Extension Urged.**—Romford & District Railway Users' Association is to urge London Transport to continue the extension of the Central Line tube from Newbury Park, Ilford, to Gallows Corner, Romford. Representatives of a number of local authorities were invited to a meeting of the association held on Wednesday.

**New Spanish Locomotive.**—The first locomotive built in Spain since the end of the Civil War has just been delivered to the Madrid, Zaragoza & Alicante (M.Z.A.) Railway by a local engineering firm; it is the largest yet built in Spain, and weighs 116 tons, and is one of an order for ten which, though well advanced, were left unfinished during the Republican regime.

**Roumanian - Hungarian Railway Agreement.**—A Reuters message from Budapest, dated August 3, states that negotiations between representatives of Hungary and Roumania for the resumption of railway traffic between the two countries have been successfully concluded. An agreement has been reached enabling the resumption of traffic to the frontier on August 10 on certain lines of the Hungarian State Railways.

**Northern Ireland Rail Dispute Settled.**—Proposals by the Great Northern Railway (Ireland) in connection with hours, wages, and conditions of employment of workers in the Road Transport Department of the company have been accepted by the men concerned. The men concerned are the 450 drivers, conductors, and garage hands who took strike action some weeks ago, but subsequently resumed work. Disciplinary machinery has been set up in order to give the men an opportunity of having their cases heard in matters of complaint.

**New Station for Clermont-Ferrand.**—The population of Clermont-Ferrand, in the Puy de Dôme Department of France, has risen from 63,000 in 1914 to over 100,000 at the time of the last census, and railway traffic has grown correspondingly. The South Eastern Region of the French National Railways has, therefore, begun the reconstruction of the station and the reorganisation of all the station services. The rolling-stock yard, the locomotive depot, the goods services, and the passenger, parcel and mail services have all been moved to clear the way for the work of enlarging the passenger station, which, erected in 1855, will be replaced by a central hall, with wings containing various offices. The overall roof will be replaced by umbrella roofs, and the subway is to be widened. It is expected that the new station will be opened to passengers early next spring.

**Extension of New Zealand East Coast Line Opened.**—The extension of the North Island East Coast line from Napier northwards, was officially opened by Mr. D. G. Sullivan, Minister of Railways, on July 1, the new rail-head being at Waikokopu.

**Empire Air Mail Results.**—On July 28 last year the scheme for the carriage of first class air mail in the Empire without surcharge was extended to embrace Australia, New Zealand, and neighbouring islands. Estimates of the mail carried in the year since that date place the amount at 4½ million pounds, or 118,750,000 letters. In addition the number of passengers carried is estimated at 11,000, and the weight of freight at 329,000 lb.

**Belgian Railway Posters.**—We have received from the Belgian National Railways a selection of posters with captions in French emphasizing that such and such a town or district "is best reached by rail." The subjects depicted in an artistic and colourful manner include each of the chief cities—Brussels, Antwerp, Liège, and Ghent—the smaller cities of Bruges, Mons, Courtrai, and Tournai, and the Ardennes, Campine, and coastal districts.

**Buffer Tests by London Transport.**—Early on the morning of July 29, engineers and officials of London Transport assembled in a tunnel near Aldgate East station to watch a new type of hydraulic buffer being tested. The buffer is at the end of a trap siding, into which trains held up or failing on the downward gradient at this point would be diverted. A six-car train of old Metropolitan type stock, weighing 180 tons, ran into the buffer with a force of 30 foot-tons, and then again at varying speeds until a force of 1,000 foot-tons was reached. Records of the pressures set up were taken, and it was stated afterwards that the test had been entirely satisfactory.

**Through Bank Holiday Trains to Redcar and Saltburn.**—To provide an improved through service from London to Redcar and Saltburn and to relieve the Newcastle expresses, the L.N.E.R. is running three additional through trains from King's Cross to these points today (Friday) and tomorrow. Today a train will leave King's Cross at 5.35 p.m., reaching Redcar at 10.36 and Saltburn at 10.48 p.m. and on Saturday two trains from King's Cross at 10.21 a.m. and 1.15 p.m. will reach Redcar at 3.40 and 6.28 p.m. and Saltburn at 3.54 and 6.42 p.m. respectively. All these trains will stop at Thornaby and Middlesbrough to provide improved services for Tees-side passengers.

**New Bulgarian Railway Opened by King Boris.**—On July 30 King Boris of Bulgaria inaugurated a new railway in the Rhodope Mountains, connecting Tchepino with Yakorouda. The length of new line is 37 miles, and it is estimated to have cost about £500,000. The engineering work involved in its construction was very



heavy and included 25 tunnels. The new line is an extension of the narrow gauge line from Sarambei junction—on the main line from Sofia to Istanbul—to Tchepino, south-east of Sofia.

**German Railway Posters.**—“Summer in Germany” is the theme of two new posters of the German State Railway. One shows a Rhineland-like scene with green, well-tilled fields in the foreground merging into mountains in the background; in the middle distance towers an old castle, black and forbidding, above a winding river. In the other poster, a blond German girl, holding a sheaf of blossom, gazes out over a panorama of river, village, and hill. Another poster, “Germany, the Land of Music,” is an effort in symbolism.

**Insurance of Livestock by Passenger Train.**—The railway companies have decided to renew for 12 months as from August 1 the experimental scheme inaugurated in July, 1935, for the insurance against injury or death during transit of livestock conveyed

by passenger train or other similar service and/or railway-owned vehicles used for the transport of passenger-rated livestock. The scheme does not apply to through-booked livestock to Ireland, the Channel Islands, Isle of Wight and all places overseas, nor to livestock from the Western Islands of Scotland, Orkney and Shetland Islands, Ireland, the Channel Islands, Isle of Wight, and all places overseas passing on its initial journey from a port on the mainland.

**Argentine Railway Service Resumed.**—Services have been resumed along the whole of the Buenos Ayres & Pacific Railway after the decision of the Railway Operatives' Federation to resume normal work. The company's services had been reduced by 50 per cent. as a result of “Working to Rule” action by the railwaymen in protest against a 10 per cent. wage cut. The men have now capitulated after a formal protest against the cut. The position of numerous employees who had been dismissed is under consideration.

## British and Irish Traffic Returns

GREAT BRITAIN	Totals for 30th Week			Totals to Date		
	1939	1938	Inc. or Dec.	1939	1938	Inc. or Dec.
L.M.S.R. (6,828 mls.)						
Passenger-train traffic...	763,000	1,113,000	- 350,000	14,816,000	15,466,000	- 650,000
Merchandise, &c. ...	485,000	384,000	+ 101,000	14,127,000	13,773,000	+ 354,000
Coal and coke ...	244,000	213,000	+ 31,000	8,016,000	7,640,000	+ 376,000
Goods-train traffic ...	729,000	597,000	+ 132,000	22,143,000	21,413,000	+ 730,000
Total receipts ...	1,492,000	1,710,000	- 218,000	36,959,000	36,879,000	+ 80,000
L.N.E.R. (6,320 mls.)						
Passenger-train traffic...	507,000	634,000	- 127,000	9,634,000	9,866,000	- 232,000
Merchandise, &c. ...	348,000	288,000	+ 60,000	9,666,000	9,684,000	- 18,000
Coal and coke ...	228,000	203,000	+ 25,000	7,581,000	7,167,000	+ 414,000
Goods-train traffic ...	576,000	491,000	+ 85,000	17,247,000	16,851,000	+ 396,000
Total receipts ...	1,083,000	1,125,000	- 42,000	26,881,000	26,717,000	+ 164,000
G.W.R. (3,737½ mls.)						
Passenger-train traffic...	321,000	490,000	- 169,000	6,225,000	6,441,000	- 216,000
Merchandise, &c. ...	223,000	173,000	+ 50,000	6,042,000	5,627,000	+ 415,000
Coal and coke ...	115,000	102,000	+ 13,000	3,405,000	3,291,000	+ 114,000
Goods-train traffic ...	338,000	275,000	+ 63,000	9,447,000	8,918,000	+ 529,000
Total receipts ...	659,000	765,000	- 106,000	15,672,000	15,359,000	+ 313,000
S.R. (2,142 mls.)						
Passenger-train traffic...	464,000	604,000	- 140,000	9,525,000	9,658,000	- 133,000
Merchandise, &c. ...	70,500	62,500	+ 8,000	1,845,000	1,823,500	+ 21,500
Coal and coke ...	33,500	32,500	+ 1,000	964,000	924,500	+ 39,500
Goods-train traffic ...	104,000	95,000	+ 9,000	2,809,000	2,748,000	+ 61,000
Total receipts ...	568,000	699,000	- 131,000	12,334,000	12,406,000	- 72,000
Liverpool Overhead ...	1,391	1,501	- 110	41,858	40,891	+ 967
Mersey (4½ mls.) ...	4,499	4,759	- 260	133,673	130,795	+ 2,878
* London Passenger Transport Board ...	580,300	567,200	+ 13,100	2,356,500	2,271,300	+ 85,200
IRELAND						
Belfast & C.D. pass. ...	4,959	4,950	+ 9	75,518	72,659	+ 2,859
“ ” goods ...	505	435	+ 70	12,989	12,831	+ 158
“ ” total ...	5,464	5,385	+ 79	88,507	85,490	+ 3,017
Great Northern pass. ...	15,000	16,250	- 1,250	313,500	305,050	+ 8,450
“ ” goods ...	10,250	9,550	+ 700	301,650	263,700	+ 37,950
“ ” total ...	25,250	25,800	- 550	615,150	568,750	+ 46,400
Great Southern pass. ...	48,474	52,929	- 4,455	1,024,136	1,024,060	+ 76
“ ” goods ...	40,791	35,952	+ 4,839	1,209,756	1,170,671	+ 39,085
“ ” total ...	89,265	88,881	+ 384	2,233,892	2,194,731	+ 39,161

\* 4th Week (before pooling)

Week preceding August Bank Holiday, 1938

## British and Irish Railway Stocks and Shares

Stocks	Highest 1938	Lowest 1938	Prices	
			Aug. 2, 1939	Rise Fall
G.W.R.				
Cons. Ord. ....	65¼	25¾	29½	-4½
5% Con. Prefce....	118¾	74	87½*	-3
5% Red.Pref.(1950)	111¾	90	94½*	-2
4% Deb. ....	111	97½	97½	—
4½% Deb....	112½	100½	100	—
4½% Deb....	118½	104	105	—
5% Deb. ....	131½	119	114½	—
2½% Deb....	69¾	60	59	—
5% Rt. Charge ...	129	114	110½	—
5% Cons. Guar. ...	128½	103	105½*	-2
L.M.S.R.				
Ord. ....	30½	11	13	-1½
4% Prefce. (1923)	70¼	23	39	-5
4% Prefce. ....	82¼	43¾	56½*	-5½
5% Red.Pref.(1955)	103½	66	78½	-1
4% Deb. ....	105½	85	91½	—
5% Red.Deb.(1952)	114¼	105	107	—
4% Guar. ....	102¾	77½	80½*	-4
L.N.E.R.				
5% Pref. Ord. ....	89½	3½	4½	-½
Def. Ord. ....	47½	21½	27½	-½
4% First Prefce.	68¼	21	33½	-½
4% Second Prefce.	27¼	8	12	-1
5% Red.Pref.(1955)	97	40¼	50½	—
4% First Guar. ....	97½	66¼	70½*	-3
4% Second Guar.	91¼	52	61½*	-5
3% Deb. ....	79¼	60	61½	-2
4% Deb. ....	104½	77	82½	-2
5% Red.Deb.(1947)	110½	97	103½	—
4½% Sinking Fund Red. Deb.	108½	101	98	—
SOUTHERN				
Pref. Ord. ....	87	47½	62*	-8
Def. Ord. ....	21¾	9½	13	-2½
5% Pref. ....	115	83	90½*	-6
5% Red.Pref.(1964)	115½	98	99½*	—
5% Guar. Prefce.	128½	106	107½*	-2½
5% Red.Guar.Pref. (1957)	116	108½	106½*	-2
4% Deb. ....	109¼	95	97½	—
5% Deb. ....	129	117	114	—
4% Red. Deb. 1962-67	107	101½	102½	—
BELFAST & C.D.				
Ord. ....	4	3½	4	—
FORTH BRIDGE				
4% Deb. ....	102	99½	92½	—
4% Guar. ....	103¼	94½	89	—
G. NORTHERN (IRELAND)				
Ord. ....	5½	2½	4	—
G. SOUTHERN (IRELAND)				
Ord. ....	25½	8½	10	—
Prefce. ....	35	13	12¼	—
Guar. ....	70¼	30½	26½	-½
Deb. ....	83	56	48	-3
L.P.T.B.				
4½% "A" ....	119½	107½	107½	—
5% "A" ....	130	117	114½	—
4½% "T.F.A." ..	108	98	102½	—
5% "B" ....	122½	105	106½	-2
4% "C" ....	84	68	72½	-1
MERSEY				
Ord. ....	24¼	16½	22	—
4% Perp. Deb. ....	102½	94¾	90	—
3% Perp. Deb. ....	77	69	65½	—
3% Perp. Prefce.	66½	57	52½	—

\* ex dividend

## CONTRACTS AND TENDERS

The Metropolitan-Cammell Carriage & Wagon Co. Ltd. has received an order from the Rohilkund & Kumaon Railway Administration for 20 four-wheeled bogies complete with wheels and axles for timber trucks, to be supplied to the inspection of Messrs. Rendel, Palmer & Tritton.

The Westinghouse Brake & Signal Co. Ltd. has received an order from the Assam-Bengal Railway Administration for 50 Neale's single-line tablet instruments, to be supplied to the inspection of Messrs. Rendel, Palmer & Tritton.

The Bikaner State Railway Administration has placed the following orders to the inspection of Messrs. Rendel, Palmer & Tritton:—

Monkbridge Iron & Steel Co. Ltd.: 112 axles for locomotives, carriages, and wagons.

Taylor Brothers & Co. Ltd.: 1,204 tyres for locomotives, carriages, and wagons.

Banting & Tresilian Limited: 1,598 steel boiler flue and arch tubes.

The Bengal-Dooars Railway Administration has placed orders for machine tools, to be supplied to the inspection of Messrs. Rendel, Palmer & Tritton, as follows:—

Churchill Redman Limited: Centre lathe.  
Butler Machine Tool Co. Ltd.: Slotting machine.

Ormerod Shapers Limited: Shaping machine.

The Standard Telephone & Cable Co. Ltd. has received an order from the Chinese Ministry of Communications for carrier telephone equipment to be supplied to the inspection of Messrs. Fox & Mayo.

The Chinese Ministry of Communications has placed orders through the Chinese Government Purchasing Commission for equipment for the Szechuen-Yunnan Railway, to be supplied to the inspection of Messrs. Fox & Mayo, as follows:—

Lamp Manufacturing & Railway Supplies Limited: 40 derailleurs.  
Patent Shaft & Axletree Co. Ltd.: 15 eight-metre and one 30-metre bridge spans.

The Egyptian State Railways Administration has recently placed the following orders:—

Nye & Menzies Limited: Mild steel rounds.  
Fried. Krupp, A.G.: Mild steel flat bars.  
Osnabrucker Kupfer und Drahtwerk: Solid drawn copper tubes.

Forges Usines et Fonderies de Haine St. Pierre: Slide bars.

Avon Rubber Co. Ltd.: Vacuum brake fittings.

Cammell Laird & Co. Ltd.: Steel firebox.  
Hackethal Draht und Kabelwerke: Cable.

Pilkington Bros. Ltd., Chance Bros. & Co. Ltd. and George Wild: Glasses and lenses.

Robert Ingham Clark & Company: Red lead.

Kabelwerke Duisburg: Cable.  
Siemens Bros. & Co. Ltd.: Automatic dials.

The Egyptian State Railways Administration has placed orders for bolts, nuts, and rivets divided among the following firms: H. J. Skelton & Co. Ltd., S. A. des Laminiers & Boul. du Ruau, Boulonneries et Ferronneries d'Hautmont, Usines & Boulonneries Hermant Hicquet, S. A. Gilsoco, the

Rivet Bolt & Nut Co. Ltd., and S. A. Coluflandres.

Zeiss & Company has received an order from the Great Western Railway for the supply of a special prismatic optical instrument to measure accurately 1/100,000-in. for gauge making and other fine limit work in the Swindon locomotive works toolroom.

The Tata Iron & Steel Co. Ltd. has received an order from the Indian Stores Department, Simla, for 1,652 tons of FF 50-lb. rails and 48 tons of fishplates.

Jessop & Co. Ltd. has received an order from the Indian Stores Department for 100 steel tyres.

Vickers (India) Limited has received orders from the Indian Stores Department, Simla, for 15 steel crank axles and 435 steel tyres.

### G.W.R. Contracts

The Great Western Railway has authorised the placing of the following contracts:—

Edward Plaistowe & Sons Ltd.: Provision of office accommodation, &c., at new transit shed at Westbourne Park.

Haymills (Contractors) Limited: Reconstruction of West Acton station.

J. F. Booth & Son: Construction of new station buildings at Blowers Green.

W. Walkerdine Limited: Extension of electric sub-station at Old Oak Common.

Tersons: Construction of electric sub-stations and other works at Brentham, Greenford, and Northolt.

General Electric Co. Ltd.: Provision of automatic telephone exchange at Cymric Buildings, Cardiff.

T. H. Kingerlee & Sons Limited: Construction of new goods shed, warehouse, offices, &c., at Banbury.

West's Rotinoff Piling & Construction Co. Ltd.: Pile foundations for sub-station at Greenford, in connection with North Acton to Ruislip electrification.

The Holborn Construction Co. Ltd.: Construction of a bridge over the railway between Usk and Glascoed, Monmouthshire, together with other work.

At Swindon Works:—

J. Bennie & Sons Limited: Supply of plate bending and folding press in No. 15 (fitting) Shop, Carriage and Wagon Works.

F. Town & Sons: Supply of 4-ft. 6-in. radial drilling machine in No. 15 (fitting) Shop, Carriage and Wagon Works.

Charles Churchill & Co. Ltd.: Supply of a sliding surfacing and screwcutting lathe for "E" (electrical) Shop, Locomotive Works, and a vertical milling machine and a plain horizontal milling machine (knee type) for "R" (machine) Shop, Locomotive Works.

Weatherley Oilgear Limited: Supply of one 30-ton hydraulic assembly press for "G" (millwrights) Shop, Locomotive Works.

Tangyes Limited: Supply of a hydraulic overhung forging press for "P1" (boiler mounting) Shop, Locomotive Works.

Tenders are invited by the Chief Controller of Stores, Indian Stores Department (Miscellaneous Section), Simla, receivable by August 30, for the supply on a rate contract basis of track tools including beaters, shovels, phowrahs, rakes, and hammers required for the State Railway during the period December 16, 1939 and December 15, 1940.

Tenders are invited by the Chief Controller of Stores, Indian Stores Department (Hardware Section), Simla, receivable by August 28, for the supply of steel files required on a rate contract basis for the State Railways during the period December 16, 1939, and December 15, 1940, at Calcutta, Bombay, and Lahore or Karachi.

Tenders are invited by the Controller of Purchase, Indian Stores Department, 6, Esplanade East, Calcutta, receivable by August 28, for the supply of files required for the East Indian Railway and others.

### Steam Coaling Cranes Required for India

Tenders are invited by the Chief Controller of Stores, Indian Stores Department (Electrical Section), Simla, receivable by September 14, for the supply of four or two steam coaling cranes with luffing jib or, alternatively, two with fixed jib.

Tenders are invited by the Chief Controller of Stores, Indian Stores Department (Hardware Section), Simla, receivable by August 21, for the supply of permanent way bolts, nuts, and dog-spikes, on a running contract basis during the period December 16, 1939, and December 15, 1940.

Tenders are invited by the Egyptian State Railways Administration, receivable at the Chief Inspecting Engineer's Office, 41, Tothill Street, London, S.W.1, for the supply of 140 kg. copper hose rivets and 423,500 mild steel split cotter pins. Tenders are also invited for the supply of 13,600 kg. black mild steel nuts, 25,000 kg. galvanised mild steel stay strand wire, 13,500 kg. zinc ingots, four copper plates, 300 kg. soft copper wire, 340 kg. copper wire rods, cast iron pipes, and mild steel tubes, and telephone materials.

Tenders are invited by the Egyptian State Railways Administration, receivable at the Stores Department, Saptieh, Cairo, by August 22, for the supply of cotton covered cable.

Tenders are invited by the Egyptian State Railways Administration, receivable by August 21 at the General Management, Cairo station, for the supply of 20 semi-automatic exchange units.

Tenders are invited by the Egyptian State Railways Administration, receivable at the General Management, Cairo, by August 23, for the supply of 50,000 kg. of "Loco" whitemetal ingots.

The Egyptian State Railways Administration invites tenders, closing on September 19, for 360,000 or 480,000 metric tons of coal and closing on November 4 for 40,000 metric tons.

### Forthcoming Meetings

Aug. 10 (Thurs.)—Weymouth & Portland Railway Company. (Ordinary Half-yearly Meeting). Regis House, King William Street, E.C.4, at 2.30 p.m.

## OFFICIAL NOTICES

## OFFICIAL ADVERTISEMENTS

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Thursday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

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## RAILWAY AND OTHER REPORTS

## Great Western Railway Company.

—The gross receipts from railway and ancillary businesses for the half-year ended June 30 were £456,000 more than in the corresponding period of 1938, whilst expenditure increased by £60,000. The net revenue from all sources increased by £383,000, but compared with the June, 1937, half-year there is a decline of £435,000. As compared with last year the total increase in railway receipts for the half-year was £404,000, passenger train receipts showing an increase of £5,000, goods train receipts an increase of £396,000, and miscellaneous receipts an increase of £3,000. The directors have decided to defer consideration of a dividend on the consolidated ordinary stock until the year's results have been ascertained. Warrants for the half-year's dividend on the consolidated guaranteed, consolidated preference, and redeemable preference stocks will be posted on August 16.

## London &amp; North Eastern Railway Company.

—After providing for the payment of fixed charges and interest on debenture stocks, the directors have declared interim dividends for the past half-year at the following rates: 2 per cent. actual for the half-year on the 4 per cent. first guaranteed stock; 2 per cent. actual for the half-year on the 4 per cent. second guaranteed stock; in each case less income tax at 5s. 6d. in the £. The warrants for these dividends will be posted on August 14. Consideration of payment of dividends upon other stocks has been deferred until the accounts for the whole year are available.

Compared with the corresponding period of 1938, there is an increase in gross receipts of railway and ancillary businesses, and in miscellaneous receipts (net) of £125,000, and an estimated decrease in expenditure of £734,000, leaving an increase in net receipts of £859,000. Passenger train traffic receipts for the half-year show a decrease of 0.74 per cent., and merchandise and coal traffic receipts an increase of 1.28 per cent. For the 26 weeks ended July 1, compared with the corresponding period of 1938, the number of passengers originating on the company's system (excluding season tickets) showed a decrease of 2,447,000 (or 2.8 per cent.), and the total tonnage of merchandise and coal traffic (originating on the company's system or invoiced by the company) showed an increase of 428,900

(or 0.8 per cent.). Passenger engine mileage decreased by 1,060,700 (or 2.6 per cent.), and goods engine mileage decreased by 1,104,600 (or 2.6 per cent.).

## Southern Railway Company.

—The directors announce that for the half-year ended June 30, 1939, compared with the corresponding period of last year the receipts from passenger train traffic increased by £52,000, the receipts from goods traffic increased by £40,000, and railway working expenditure was £137,000 more, due mainly to provision for increased prices. The net receipts from steamboats, docks, harbours and wharves, hotels, interest, &c. show an increase of £62,000, and the net revenue for the half-year is approximately £17,000 up. Additional debenture interest is payable in respect of the £7,500,000 4 per cent. redeemable debenture stock 1970-80 issued at the beginning of 1939. The directors have decided to pay an interim dividend on the preferred ordinary stock of £1 per cent., the same as last year. Interim dividends of £2 10s. per cent. on the guaranteed preference and preference stocks, together with the interim dividend of £1 per cent. on the preferred ordinary stock, will be paid (less income tax) on August 16 next to those proprietors whose names were registered in the books of the company on July 13, on which date the balances were struck.

## Great Northern Railway (Ireland).

—The directors have had before them the accounts for the half-year to June 30, 1939, and regret that since there has been a net loss on working the undertaking, notwithstanding the improvement in traffic receipts, they are obliged to defer the consideration of payment of a dividend to the guaranteed stockholders until the end of the year. It follows that the results do not permit of the payment of any dividends on the preference and ordinary stocks.

## Fishguard &amp; Rosslare Railways &amp; Harbours Company.

—The net revenue for the half-year to June 30 was £39,563, this being the amount provided under the guarantee of the Great Western and Great Southern (Eire) Railway Companies, after accounting for fees and expenses. Of the balance of £39,430, debenture interest takes £13,904, the dividend on the new guaranteed 3½ per cent. preference £21,659, and dividend on new 3½ per cent. preference (1914) £3,867.

**Metropolitan Railway Surplus Lands Co. Ltd.**—The board has declared an interim dividend of 1 per cent. for the half-year ended June 30, the same as for the corresponding period of last year.

## La Guaira &amp; Caracas Railway.

—Powers will be sought at a meeting of stockholders on August 10 to extend the moratorium on the 5 per cent. debentures, for successive periods to September 1, 1942. A similar moratorium is proposed in respect of the five-year secured notes, the term of which is to be extended for 3 years. The company proposes to make a further payment, on September 1 next, of 1¼ per cent. on the stock, being the balance of interest due March 1, 1934, plus interest.

## Rohilkund &amp; Kumaon Railway.

—For the half-year ended March 31, the company's share of net earnings was £46,603, compared with £64,629 for the corresponding period of 1938. After providing for United Kingdom taxes, debenture interest, and preference dividends, and for the Secretary of State's share of surplus profits, the directors declare an interim dividend of 4 per cent., together with a bonus of 4 per cent., or 8 per cent. in all. Compared with the previous half-year there was a decrease of Rs. 1,06,345, or 2.77 per cent. in the total gross earnings of the open system. Coaching receipts increased by Rs. 71,731, or 5.66 per cent., but goods receipts fell by Rs. 1,56,853, or 6.61 per cent., owing to a short sugar season. Working expenses increased by Rs. 3,22,573 and the ratio of working expenses to gross earnings was 9.94 per cent. higher.

## Bengal &amp; North Western Railway.

—The accounts for the half-year show that the company's share of net earnings was £378,337 (against £406,774 for the corresponding period last year), which, with £65,918 brought forward, makes a total available of £443,115. After providing for debenture interest and preference dividends, an interim dividend is declared of 4 per cent., together with a bonus of 4 per cent., or 8 per cent. in all. This absorbs £204,000, leaving £47,735 to be carried forward. There was an increase in the gross earnings of the open system of Rs. 5,66,250, compared with the corresponding half-year of 1938, coaching receipts having increased by Rs. 2,14,361, or 2.83 per cent., and goods receipts by Rs. 3,41,975, or 3.13 per cent. On the other hand, working expenses were higher by Rs. 7,42,092.



## Railway Share Market

Despite the good employment figures and other indications that, partly owing to armament and Government work, industrial activity is increasing, the new Stock Exchange account failed to bring any improvement in business to the stock and share markets. Sentiment was influenced by the fact that, as a result of holiday considerations, markets are usually inactive during August. It is realised, however, that in the event of an important turn for the better in the international sphere, all sections of the Stock Exchange would probably show a widespread improvement in values.

As was to be expected home railway securities were affected by the surrounding market trend. Subsequently prices were marked down sharply in view of the uncertainties aroused by the wages claims, which, as far as markets are concerned, more than counterbalanced the satisfactory impression created by the half-yearly dividend decisions. The past week's traffic figures were in accordance with general estimates, bearing in mind that they compare with the pre-holiday week last year. In view of the wages claims the market is taking a more cautious view of the dividend outlook

for the junior stocks, and at the moment the disposition is to budget for not more than  $3\frac{1}{2}$  per cent. on L.M.S.R. 1923 preference and for  $2\frac{1}{2}$  per cent. on Great Western ordinary stock. Great Western ordinary has declined on balance from 34 to 29 $\frac{1}{2}$ , and the 5 per cent. preference was 88 $\frac{1}{2}$ xd, compared with 91 $\frac{1}{2}$  a week ago, while the 4 per cent. debentures were fractionally lower at 97 $\frac{1}{2}$ . There was, however, very little selling reported, and the reaction in home railway securities arises from a marking down of prices by jobbers as a precautionary measure now that the outlook has been obscured by labour fears. L.M.S.R. ordinary went back from 14 $\frac{1}{2}$  to 12 $\frac{1}{2}$ , while the 1923 preference was 39, compared with 44 $\frac{1}{2}$  a week ago, and the 4 per cent. preference 57xd, compared with 62 $\frac{1}{2}$ . The guaranteed stock lost three points to 81xd, but this was due mainly to deduction of the half-yearly interest from the price. The half-yearly statement of the L.N.E.R. was up to best market expectations, and the interim payments on the guaranteed stocks have not necessitated any withdrawal from reserves on this occasion. Nevertheless, in sympathy with the

general trend, the first guaranteed has moved down on balance from 73 to 70xd and the second guaranteed from 66 to 63xd. Moreover the first preference was 33, compared with 35 $\frac{1}{2}$  a week ago, and the second preference 11 $\frac{1}{2}$ , compared with 12 $\frac{1}{2}$ , while the 4 per cent. debentures lost 1 $\frac{1}{2}$  points to 83 and the 3 per cent. debentures were a point down at 62. Southern stocks were affected by the increase in expenses shown in the half-yearly statement, although it is realised that the railway usually has by far its best period in the last six months of the year. Nevertheless the preferred stock has fallen from 70 to 62 $\frac{1}{2}$ xd, while the deferred was 12 $\frac{1}{2}$ , as against 15 $\frac{1}{2}$  a week ago. The 5 per cent. preference lost 3 $\frac{1}{2}$  points to 93xd, and the yield would appear to be attractive, bearing in mind that the dividend requirements of this trustee stock have invariably been covered by a good margin. London Transport "C" moved down from 73 $\frac{1}{2}$  to 72.

Argentine and other foreign railway stocks were reactionary, and in most cases it would appear that prices were not adequately tested by business. Canadian Pacific preference stock was relatively steady, but the common shares were slightly lower at \$4 $\frac{3}{4}$ .

### Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1938-39	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices					
				Total this year	Inc. or Dec. compared with 1938		Totals		Increase or Decrease		Highest 1938	Lowest 1938	Aug. 1939	Yield % (See Note)		
							This Year	Last Year								
South & Central America	Antofagasta (Chili) & Bolivia	834	30.7.39	£ 7,830	—	£ 3,330	30	388,490	473,410	—	£ 84,920	Ord. Stk.	14	71½	6	Nil
	Argentine North Eastern ..	753	29.7.39	11,296	—	143	5	46,538	49,882	—	3,344	"	61½	2	31½	Nil
	Argentine Transandine ..	—	—	—	—	—	—	—	—	—	—	A. Deb.	82	75	62½	6½
	Bolivar .. .. .	174	June 1939	4,650	+	1,100	26	24,950	22,600	+	2,350	6 p.c. Deb.	8	7	7	8½
	Brazil .. .. .	—	—	—	—	—	—	—	—	—	—	Bonds	10	4	6	8½
	Buenos Ayres & Pacific ..	2,801	29.7.39	68,797	—	5,769	5	318,363	314,827	+	3,536	Ord. Stk.	61½	31½	6 3/8	Nil
	Buenos Ayres Central ..	190	15.7.39	\$142,200	+	\$29,200	3	\$275,200	\$293,700	—	\$18,500	Mt. Deb.	151½	8	11	Nil
	Buenos Ayres Gt. Southern	5,082	29.7.39	116,998	—	14,764	5	491,812	540,447	—	48,635	Ord. Stk.	175½	81½	7	Nil
	Buenos Ayres Western ..	1,930	29.7.39	45,596	+	5,956	5	181,019	166,500	+	14,519	"	123½	5	6	Nil
	Central Argentine .. ..	3,700	29.7.39	127,854	+	26,281	5	554,743	446,778	+	107,965	"	131½	53½	61½	Nil
	Do .. .. .	—	—	—	—	—	—	—	—	—	—	Divd.	6	21½	21½	Nil
	Cent. Uruguay of M. Video	972	22.7.39	17,848	+	44	4	55,172	56,849	—	1,677	Ord. Stk.	3	11½	1	Nil
	Costa Rica .. .. .	188	May 1939	24,302	+	2,198	48	245,516	283,030	—	37,514	Stk.	28	22½	22½	8½
	Dorada .. .. .	70	June 1939	13,800	—	2,700	26	80,600	95,700	—	15,100	1 Mt. Db.	105½	104	102½	5½
	Entre Rios .. .. .	810	29.7.39	16,272	+	782	5	73,120	66,438	+	6,682	Ord. Stk.	71½	31½	4	Nil
	Great Western of Brazil	1,092	29.7.39	4,800	+	100	30	250,200	202,100	+	48,100	Ord. Sh.	31½	11½	11	Nil
	International of Cl. Amer.	794	June 1939	\$433,084	+	\$7,473	26	\$3,234,011	\$3,010,488	+	\$223,523	"	—	—	—	—
	Interoceanic of Mexico ..	—	—	—	—	—	—	—	—	—	—	1st Pref.	6d.	6d.	1½	Nil
	La Guaira & Caracas ..	221	July 1939	6,490	+	1,145	30	41,920	35,580	+	6,340	Stk.	8	61½	71½	Nil
	Leopoldina .. .. .	1,918	29.7.39	22,520	—	1,706	30	577,670	567,247	+	10,423	Ord. Stk.	4	1	1	Nil
Mexican .. .. .	83	21.7.39	\$255,600	—	\$5,400	3	\$778,000	\$835,500	—	\$57,500	"	1½	11½	13½	Nil	
Midland of Uruguay ..	19	June 1939	6,839	—	594	52	103,758	111,938	—	8,180	"	52½	15	15	Nil	
Nitrate .. .. .	386	31.7.39	4,754	—	455	30	70,318	90,505	—	20,187	Ord. Sh.	52½	15	15	Nil	
Paraguay Central .. ..	274	22.7.39	\$3,676,000	—	\$170,000	4	\$11,748,000	\$11,438,000	+	\$310,000	Pr. Li. Stk.	60	55½	40½	14½	
Peruvian Corporation ..	1,059	June 1939	59,567	—	7,164	52	785,648	946,133	—	160,485	Pref.	53½	13½	1	Nil	
Salvador .. .. .	100	22.7.39	49,350	—	41,022	4	433,132	436,189	—	43,057	Pr. Li. Db.	23	20	19½	Nil	
San Paulo .. .. .	1534	23.7.39	30,625	—	2,306	29	916,516	960,109	—	43,593	Ord. Stk.	64	28	21½	9½	
Taltal .. .. .	160	June 1939	2,455	+	160	52	33,700	39,100	—	5,400	Ord. Sh.	131½	1	1½	10	
United of Havana .. ..	1,353	29.7.39	14,792	—	1,459	5	66,093	67,329	—	1,236	Ord. Stk.	35½	12	31	Nil	
Uruguay Northern .. ..	73	June 1939	694	—	207	52	11,341	11,259	+	82	Deb. Stk.	2	1	2	Nil	
Canada	Canadian National ..	23,762	21.7.39	707,377	+	48,136	29	19,604,757	18,440,669	+	1,164,088	"	—	—	—	—
	Canadian Northern ..	—	—	—	—	—	—	—	—	—	4 p.c.	Perp. Dbs.	72	60	68½	51½
	Grand Trunk .. .. .	—	—	—	—	—	—	—	—	—	104	90	96½	41½	—	—
	Canadian Pacific .. ..	17,171	21.7.39	539,200	+	35,400	29	13,877,400	13,725,600	+	151,800	Ord. Stk.	87½	41½	41½	Nil
India	Assam Bengal .. .. .	1,329	10.7.39	37,605	+	2,924	14	390,321	377,876	+	12,445	Ord. Stk.	811½	70	71½	45½
	Barsi Light .. .. .	202	10.7.39	2,310*	—	12,090	14	36,247	49,140	—	12,892	Ord. Sh.	601½	54½	501½	51½
	Bengal & North Western	2,112	10.7.39	63,669	—	8,452	14	784,983	870,069	—	85,085	Ord. Stk.	311	278	253	71½
	Bengal Doonars & Extension	161	20.7.39	3,159	—	758	16	32,652	39,743	—	7,091	"	89	83	91½	71½
	Bengal-Nagpur .. .. .	3,267	10.7.39	183,825	—	12,581	14	2,223,077	2,054,107	+	168,939	"	951½	90	90½	47½
	Bombay, Baroda & Cl. India	3,085	20.7.39	199,725	—	10,650	16	2,708,025	2,768,025	—	60,000	"	1127½	95	104½	53½
	Madras & Southern Mahratta	2,967	10.7.39	146,775	—	3,487	14	1,750,809	1,666,536	+	84,273	"	108	97	101½	7½
	Rohilkund & Kumaon ..	571	10.7.39	13,051	—	1,375	14	161,434	179,346	—	17,911	"	308	285	261	67½
South Indian .. .. .	2,531½	10.7.39	115,226	+	7,711	14	1,183,050	1,178,227	+	4,823	"	104	101	95½	5½	
Various	Beira-Umtali .. .. .	204	May 1939	88,259	—	—	35	636,331	—	—	—	—	—	—	—	—
	Egyptian Delta .. .. .	623	10.7.39	5,434	+	451	14	50,206	49,939	+	267	Prf. Sh.	7½	51½	12	Nil
	Kenya & Uganda .. ..	1,625	May 1939	206,557	—	11,295	21	1,220,870	1,309,332	—	88,462	B. Deb.	49	41	42	82½
	Manila .. .. .	—	—	—	—	—	—	—	—	—	—	Inc. Deb.	93½	89	89	4½
	Midland of W. Australia	277	May 1939	14,100	—	2,469	48	165,763	164,159	+	1,604	"	—	—	—	—
	Nigerian .. .. .	1,900	17.6.39	26,504	—	1,490	12	325,657	351,117	—	25,460	"	—	—	—	—
	Rhodesia .. .. .	2,442½	May 1939	365,832	—	35	35	1,880,230	—	—	—	—	—	—	—	—
	South Africa .. .. .	13,284	22.7.39	654,504	+	28,311	17	10,420,611	9,846,264	+	574,347	"	—	—	—	—
	Victoria .. .. .	4,774	May 1939	800,924	—	54,892	48	8,666,883	9,084,032	—	417,149	"	—	—	—	—

NOTE. Yields are based on the approximate current prices and are within a fraction of 1 $\frac{1}{2}$

\* Ashadi Fair.

† Receipts are calculated @ 1s. 6d. to the rupee.

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being over estimated. The statements are based on the current rates of exchange and not on the par value